DECEMBER, 1957

Industrial FINISHING

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Get full benefits with Sherwin-Williams coast-to-coast field service

Adjustment of formulations is as important as adjustment of equipment, in getting full benefits from either electrostatic or flow-coat installations.

With industry-wide experience in these as well as other processes, Sherwin-Williams is equipped to supply the finishing materials and the technical service needed to adjust solvent balance, viscosity level and other factors to the needs of the installation.

Put this valuable first-hand experience to work through your Sherwin-Williams Industrial Representative. Call or wire, The Sherwin-Williams Co., General Industrial Division, Cleveland 1, Ohio.

SHERWIN-WILLIAMS INDUSTRIAL FINISHES

Now! **Save up to 50%**
in wrinkle material costs!

NEW IC* ELECTROSTATIC
Rincontrol*
ENAMELS
in Pastels and Dark Colors

Interchemical brings you substantial economy in textured finishes with its new *electrostatic* wrinkle finish! Savings soar because of greatly reduced material consumption. One major manufacturer reports savings in material costs of up to 50% because of lower rejects and less paint waste.

New IC Electrostatic Rincontrol is available in *pastels* as well as dark colors and gives you a wide choice of textures. In addition, it provides the long-famous features of IC Wrinkles — excellent uniformity, and high resistance to abrasion, perspiration, and impact.

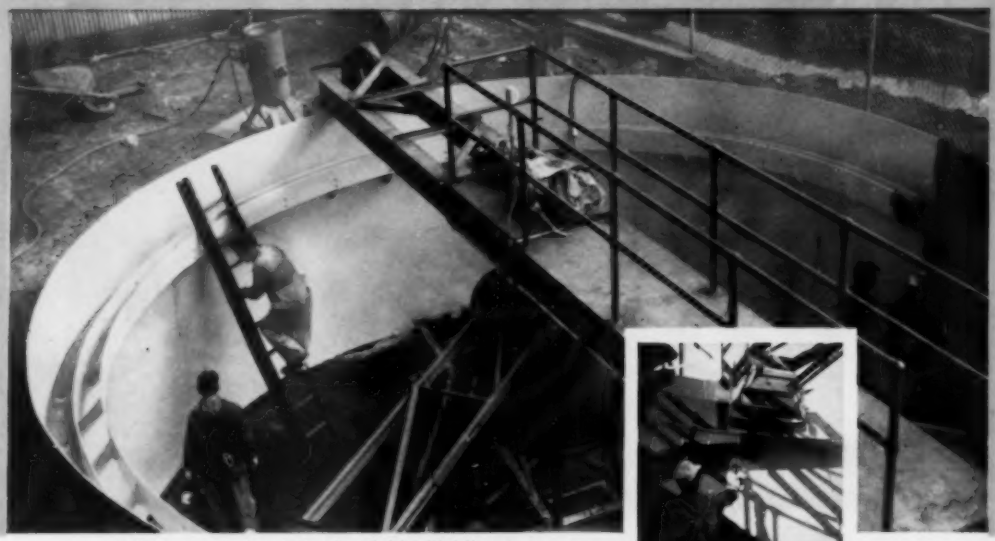
Contact your IC Finishes Specialist about production-tested IC Electrostatic Rincontrol, or write for complete information.

Interchemical
CORPORATION
Finishes Division

Headquarters Office: 224 McWhorter St., Newark 5, N. J. Fa[illegible]icago, Ill. • Cincinnati, Ohio • Elizabeth, N. J. • Los Angeles, Calif. • Newark, N. J. • Mexico City, Mex. • In Canada this product is made by Aderaft Paints Limit[illegible], Toronto, Ontario, and sold under its trademark. *IC and *Rincontrol* are trademarks of Interchemical Corporation.

EPON® RESIN does it!

Protects steel clarifier from corrosive chemical wastes



The Epon resin-based Porselon finish will deliver many years of maintenance-free protection from corrosion and abrasion.

Steel clarifier at Trubek Laboratories is quickly coated with Porselon, an Epon resin-based paint, for maximum protection against corrosive acids.

Here's how:

To help solve stream-pollution problems, Trubek Laboratories, Inc., East Rutherford, New Jersey, installed a treatment plant to neutralize corrosive waste water from the manufacture of its more than 400 chemical products.

An integral part of the system included a huge clarifier. Trubek engineers knew that metal-eating acids would soon disable the clarifier's steel components. Based on its successful use as a high-performance protective coating on structural steel and machinery, Trubek chose Porselon, an Epon resin-based paint made by Protex-A-Cote, Inc., Newark, N. J., to combat these corrosive conditions.

TIME: Fall of 1956. *METHOD:* Three coats of Epon resin-based Porselon were applied over an undercoat of zinc chromate Epon resin-based primer to form a 5-mil thickness. *RESULT:* An incredibly tough, acid-resistant surface which combines the advantages of a rugged baked film with the convenience of air drying. Porselon is easily applied with a brush, roller or conventional spraying equipment.

If you have a coating problem, an Epon resin-based formulation may be your answer. Its outstanding abrasion- and chemical-resistance makes it an ideal all-purpose industrial coating.

Call on Shell Chemical sales offices for names of suppliers. And write for the full Epon resin coatings story, "Planning to Paint a Pyramid?" You'll find it interesting and valuable.

Epon resins are the epoxy polymers made exclusively by Shell Chemical Corporation.

SHELL CHEMICAL CORPORATION

CHEMICAL SALES DIVISION, 380 Madison Avenue, New York 17, New York

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IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited • Montreal • Toronto • Vancouver

SHELL

RUUD WATER HEATERS

live long and look young

with two-way protection*

Ruud, the world's first maker of automatic gas water heaters, designs and builds high-performance models for homes, commerce and industry. Long lasting, trouble-free tank life is assured by the use of non-rusting Ruud Alcoa Alloy or Copper Nickel inside, and tough Guardsman enamel outside. This exterior finish in gleaming white and smart trim colors makes Ruud as beautiful as it is practical.

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Grand Rapids, Michigan

Makers of the famous ®Guardsman *Finish and* ®Guardsman *Cleaning Polish*

*THE BETTER THE FINISH THE BETTER THE BUY

December, 1957
Vol. XXXIV, No. 2

BPA

A monthly magazine for company executives, production superintendents, process engineers chemists, purchasing agents, paint shop and finishing department foremen of industrial plants where product surface cleaning and painting are major operations in the manufacture of parts and products of all kinds.

Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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Accepted as Controlled Circulation Publication at Indianapolis, Indiana

34 THIRTY-FOURTH YEAR OF PUBLICATION

Random Comment

Modern Design; No Gadgets. This is the answer to the current trend in design of home interiors, according to William Shrader, custom designer of hi-fi installations in the Washington, D.C. area for the last 19 years.

"For a while there it looked as if most new possessions acquired by the American family had to have a space ship look to express the product designer's ideas of modern functionalism," the designer said. "They clinked, clattered, whirred, buzzed—and they looked the part. You got the impression that if you pushed the right button on the right instrument panel, the whole house might take off.

"Well, all of that has been changed. Product designers have repented. Homes were just getting too gadget-y looking. Appliances are now being designed to look like furniture . . . rich, restful, pleasant furniture."

The transformation of the American kitchen has already occurred, Shrader said, with cabinets, walls, and even the new wall ovens finished luxuriously in wood to relieve the laboratory look.

* * *

Plastic Tough as Metal. "Lexan" is the name of a new plastic material that equals metal in toughness. It is a product of the General Electric Company.

This plastic will withstand 284° F. It has exceptional impact strength and resistance to water and dilute acids. An example will illustrate a part of its worth to industry.

A sawmill used Lexan nails to strap logs together to float down the river to a mill. The plastic nails left in the logs had no damaging effect on the steel bandsaw teeth when the logs were sawn into boards.

* * *

Automation; Skilled Manpower. Automation, the science that does things faster and better than humans can, will also create a much larger demand for skilled manpower, according to Malcolm P. Ferguson, president of Bendix Aviation Corp.

Speaking recently before a conference at the University of Michigan school of business administration, Ferguson told 250 business leaders that "automation will require the training of more people in some of the traditional skilled manual operations." In other words, he added, "automation may not only present a problem of new skills in itself, but also a quantitative increase in certain existing skills, such as those of machine tool manufacture and maintenance technicians for specialized equipment."

He also predicted that great technological changes associated with automation will also create thousands of new businesses, as well as new jobs. The room for expansion is infinite, in engineering, development, sales, servicing and maintenance of

DOLAN'S multicolor finish!

SPEX multicolor
ONE COAT FINISH

For economy, beauty and durability, use Dolan's SPEX. Spray a combination of two or more distinct contrasting or harmonizing colors in one coat with standard spray equipment. Will hide all surface irregularities and is suitable for finishing wood, metal, plastic, brick, concrete and all types of composition board. Dries like lacquer—good coverage—excellent resistance to water—acids—abrasives—chemicals and marring. Available in a great number of attractive stock colors. Color card supplied upon request.

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V. J. DOLAN & COMPANY, Inc.
Manufacturers of "Unquestionable Quality"
INDUSTRIAL FINISHES
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HERE ARE enumerated in this remarkably valuable book of 544 pages, all of the common nad a variety of unusual and seldom heard-of defects and objectionable features that occur in paint, varnish, lacquer and synthetic enamel finishes; their probable, possible or real causes given; the effects described, and means of preventing and remedying these troubles fully outlined.

Chapters deal with these defects and troubles as they occur, 1) during or as a result of storage and preparation of materials before finishing; 2) when the materials are applied by various production methods and equipment, 3) during handling, processing or drying after application; and finally, 4) when and after the finished goods are shipped, displayed, stored or placed in service.

Defects covered include many more than could be named here, but to mention just a few there are: runs, sags, tackiness, films, too thin or too thick, slow drying, orange peel, alligatoring, wrinkling, pimples in films, pinholing, cracking, blistering, lifting, bleeding, blushing, blooming, discoloration, rainbow effects, gloss and dull areas, grained appearance, and scores of others.

Practical information is also revealed in reference to safety precautions to prevent fires or accidents in paint shops and finishing rooms, skin troubles of workmen, poison from paint materials and fumes.

By referring to the "Subject Index" of 84 pages in back of the book, it is possible to locate quickly, the answer to any particular failure, cause or remedy.

Price $12.00—Money Back Guarantee.

INDUSTRIAL FINISHING

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product, and "the inventive spark that has founded many new concerns will be even more prevalent."

* * *

Artists New Painting Medium. Amateur painters and professional artists, always striving to attain new artistic effects, are currently experimenting with a new painting medium which substitutes a plastic—"Lucite" 44 acrylic resin—for the varnish known as "dammar," customarily used. The use of Du Pont's "Lucite" in a vehicle mixed with tube oil colors enables the artist to create an oil which is fast drying, flexible, stable, and which appears to produce more light from the pigments.

"Lucite" is mixed with linseed oil and turpentine. The proportions depend on the individual's painting technique. It can be applied thin like a watercolor with a brush, or impasto with a palette knife. One suggested mixture is 60% to 70% "Lucite" mixed with 30% linseed oil and turpentine. The addition of oil as part of the painting vehicle makes the film of "Lucite" more cohesive and the surface more permanent.

A medium containing "Lucite" tends to "give" with the canvas and will not crack or peel even when the painting is rolled for easy storage or shipment. . . .

* * *

Curtain Wall Panels. A new building product development—lightweight translucent structural curtain wall panels that provide exceptional design freedom at minimum construction cost—has been introduced by Kalwall Corp., Manchester, N. H.

The Kalwall panels are prefabricated self-supporting "sandwiches" of fiberglass reinforced plastic sheets bonded to an aluminum grid. Com-

[*Continued on page 137*]

PIONEERING QUALITY INDUSTRIAL FINISHES SINCE 1928

RELIABILITY—

"Quality that can be relied or depended upon."

(Webster's New International Dictionary)

CLINTON Reliability conforms to this definition—

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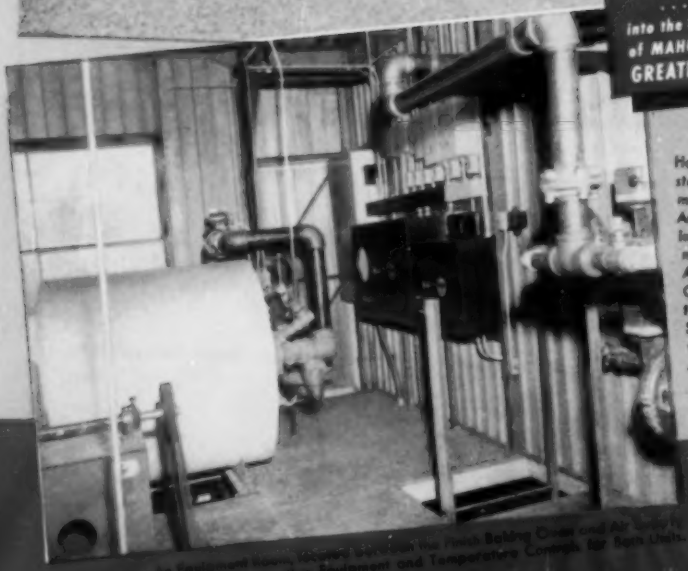
COMPLET

. . . the **EXPERIENCE** that goes into the **PLANNING** and **ENGINEERING** of **MAHON EQUIPMENT** is the item of **GREATEST VALUE to YOU!**



An Equipment Room, located beneath the Finish Baking Oven and Air Supply Room, Houses Heating Equipment and Temperature Controls for Both Units.

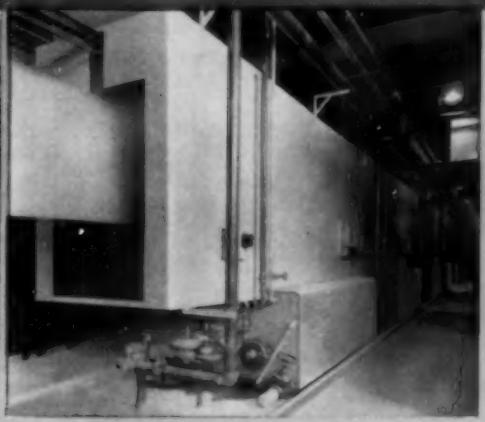
Above is the Mahon Self-Housed Finish Baking Oven installed on the Roof of the Hussmann Refrigerator Co.'s Plant. An extension of the Oven Housing is divided into two compartments which house the Filtered Air Supply Equipment and the Oven Heating Units and Controls for both Oven and Air Supply. Louvered Air Intake is visible on the Roof over the Air Conditioning Room.

M

Finishing SYSTEMS

. . . for ENAMELS • LACQUER • PAINT • VARNISH

Two Mahon Hydro-Filter Spray Booths, one 48 Ft. and one 24 Ft. long, are Enclosed in an Air Conditioned Spray Room.



Mahon Five-Stage Metal Cleaning and Rust Proofing Machine—Part of the Complete Mahon Finishing System at Hussmann.

MAHON Installs THIRD COMPLETE FINISHING SYSTEM in HUSSMANN REFRIGERATOR PLANT!

In addition to several smaller projects, the Mahon Company has installed three Complete Finishing Systems for the Hussmann Refrigerator Co., St. Louis, Mo. The latest one, illustrated here, was designed to paint steel shelving. It consists of a five-stage Metal Cleaning and Rust Proofing Machine, a Dry-Off Oven, two Hydro-Filter Spray Booths, an Air Conditioned Spray Room, and a Finish Baking Oven. The Cleaning and Rust Proofing Equipment, Dry-Off Oven and Air Conditioned Spray Room are located inside the plant; the Filtered Air Supply Equipment and the Finish Baking Oven are housed on the roof. This is a typical Mahon Finishing System designed to occupy a minimum of floor space inside the plant, and to do a particular finishing job efficiently and economically. Repeat orders from customers over a period of years is an unquestionable expression of confidence in the Mahon organization, and it is an unspoken tribute to Mahon engineering, and to the quality and operating efficiency of Mahon equipment. If you have a finishing problem, or are contemplating new finishing equipment, you, too, will want to discuss methods, equipment requirements and possible production layouts with Mahon engineers . . . you'll find them better qualified to advise you, and better qualified to do the all-important planning, engineering and coordinating of equipment, which is the key to producing the finest finishes at minimum cost. See Sweet's Plant Engineering File for information and representative installations, or write for Catalogue A-658.

THE R. C. MAHON COMPANY, Detroit 34, Michigan • Branch Offices in New York and Chicago

Engineers and Manufacturers of Metal Cleaning and Pickling Equipment, Metal Cleaning and Rust Proofing Equipment, Spray Booths, Flow Coaters and Dip Coaters, Drying and Baking Ovens, and Complete Conveyorized Finishing Systems.

MAHON

DU PONT *PRODUCT NEWS*

New Du Pont cost-analysis method helps you save money two ways

• Du Pont's exclusive cost-analysis method can help you cut cleaning costs or help you choose the best cleaning process for your needs. This new service is now available at no cost or obligation.

Du Pont and its distributors of **Triclene® D** trichlorethylene now offer an accurate method for analyzing all costs involved in metal cleaning. This new Du Pont service can save you money by helping you (1) determine where present cleaning costs can be cut, or (2) choose the most efficient cleaning process if you're expanding or planning a new installation.

Du Pont's exclusive cost-analysis method combines 20 years of metal-cleaning experience with proven cost-accounting procedures. The result is a simplified and thoroughly reliable way to compare all costs of various cleaning processes or of alternate methods of handling your present cleaning operation.

Du Pont's cost analysis gives you a *complete* cost picture and doesn't stop with the obvious, and usually misleading, cost factors such as equipment, solvent or chemicals. You'll be able to answer any question about your cleaning costs confidently and instantly spot those that are out of line.

Du Pont, or its distributors of "Triclene" D, will be glad to give you full details. Whether it's cutting costs, improving your present cleaning results or trying to decide which cleaning process is best for you—you can get accurate answers using Du Pont's proven cost-analysis method. Use the coupon for prompt attention.

a Conveyorized vapor-degreasing unit cleans oil, grease and chips from machined aircraft cylinders.

Why vapor degreasing with Triclene® D is ideal for assembly-line cleaning

It's fast—Vapor degreasing with "Triclene" D removes grease, oil, cutting compounds and other contaminants—usually in less than a minute!

It's thorough—Vapor degreasing with "Triclene" D leaves parts clean and dry—instantly ready for the next operation; never causes etching or staining—leaves no deposits of any kind.

It's versatile—Vapor degreasing with "Triclene" D will clean parts made of all common metals and alloys, in any size or shape.

It's economical—Vapor-degreasing equipment is compact and inexpensive to install. Parts come out dry, eliminating need for dryers—saves valuable floor space. Superior cleaning action of "Triclene" D eliminates rejects, cuts downtime.

It's easy to operate—Anyone can do it. In fact, vapor degreasers can be run automatically. Du Pont will be glad to provide instructions for proper operation of your vapor degreasers if you wish.

▶ If you would like to know more about degreasing, or want to be sure you're getting the most efficient cleaning from your present degreaser, call your Du Pont "Triclene" D distributor. If needed, he can call in one of Du Pont's metal-cleaning experts. You can also contact any Du Pont district sales office or use the coupon at right.

FOR MODERN METAL CLEANING

Du Pont's combination of neutral stabilizers makes TRICLENE® D

THE BEST BUY IN DEGREASING SOLVENTS

It's a proven fact that "Triclene" D trichlorethylene gives brighter, stain-free cleaning; keeps degreaser coils free of sludge, thus reducing costly downtime and maintenance problems from clean-outs. All of these advantages can be traced to the unique combination of *neutral* stabilizers present in today's "Triclene" D.

Developed by Du Pont research, these stabilizers guard against attack from any deteriorating influences that may be involved in cleaning today's common metals and alloys. As a result, acids—formed by metals such as aluminum, or by contaminants such as oil, grease and cutting compounds—have no harmful effect on "Triclene" D's cleaning action. You get more mileage from "Triclene" D . . . or, put another way, you need less solvent to do the cleaning job when it's "Triclene" D.

Here's another economy feature. The neutral stabilizers in "Triclene" D are locked in and can't escape during distillation. Result: "Triclene" D is just as good after distillation as it was when Du Pont shipped it to you.

Experience in hundreds of metalworking plants has proved that "Triclene" D is the best buy in degreasing solvents. If you would like to prove it in *your* degreasing operation, just call Du Pont, any distributor of "Triclene" D, or use the coupon below.

Your distributor of TRICLENE® D– *a good man to have on your team*

Take inventories, for example. Think how much more of a problem they would be if you couldn't just call your distributor and get whatever supplies you need, where and when you need them. This applies not only to "Triclene" D, but to all of the other products he stocks locally for your convenience. But just one call from you—sometimes at the last minute—and you get the materials you need to keep production lines rolling. This convenience extends to your bookkeeping, where a single invoice can cover all of the different products you order.

More important perhaps than any of these valuable services is your distributor's local interest in you and your company. As an active member in your community, he takes care to provide you with quality products and any technical service that may be needed. If a difficult metal-cleaning problem develops, for example, he can call to your aid one of Du Pont's technical men. And it doesn't have to be a problem—he'll be glad to bring in an expert just to talk over any new ideas or plans you may have for expansion. Such meetings can often save you time and money.

Your distributor of "Triclene" D is a storehouse of valuable information, too. Manufacturers of the many products he represents keep him posted on new developments. He is always glad to share his information and provide you with useful literature. Think about the number of ways your distributor of "Triclene" D can help you—then give him a call. You'll find he's a good man to have on your team.

* * *

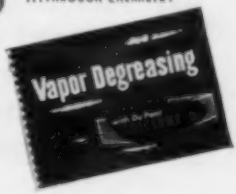
DID YOU KNOW 7 degreasers using "Triclene" D went two years without the need for a clean-out for a leading aircraft company? Striking proof of the stability, purity and dependability of this rugged solvent.

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

FREE VAPOR-DEGREASING BOOKLET tells you how vapor degreasing works, shows types of equipment, points out many cost-saving advantages. Just mail the coupon below for your copy.



ELECTROCHEMICALS DEPARTMENT
Chlorine Products Division

E. I. DU PONT DE NEMOURS & CO. (INC.)
Wilmington 98, Delaware

☐ Please send more information on your new cost-analysis method. IF-11
☐ Please send me your booklet on vapor degreasing.
☐ Please have your representative call for an appointment.

*Name*_____ *Position*_____

*Present method of cleaning*_____

*Firm*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

In 36 HOURS you'll get an answer to your Paint Stripping Problems when you send them to DuBois' New

Send us several parts of the work to be stripped or test panels specially prepared if the work is unwieldy.

Thirty-six hours after receipt of the work, a report will be on the way back to you — by telephone if necessary.

Tag each part with name, date and essential problem details including requirements, as, hot and cold methods, tanks available, etc. Write separately, outlining problem, to whom report should go. No charge or obligation, of course.

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NEW PAINT STRIPPING CLINIC, CINCINNATI 3, OHIO

Perfection Heat-Resistant Aluminum Coating

helps manufacturer sell potato baking units

The New Orleans Baking Rosin Company, of Indianapolis, credits booming sales of its potato baking unit to high product quality, particularly in their container's heat-resistant finish. The manufacturer insists on Perfection Aluminum Coating, made with ALCOA® Aluminum Pigments by the Perfection Paint & Color Company of Indianapolis, Indiana.

Subjected in use to continuous heating and cooling, Perfection Aluminum Coating demonstrates high heat-resistant durability with no peeling or flaking. Because the unit is used in food preparation, the manufacturer finds this nondeteriorating, nontoxic finish an effective selling point.

Investigate the selling advantages of aluminum finishes for your products.

ALCOA does not make paint, but paint manufacturers, working with ALCOA Aluminum Pigments, have developed a wide range of metallic finishes that are adding extra protection, building big sales for a variety of products. These finishes cost no more than ordinary coatings, and save money on surface preparation as well.

Get all the facts from your paint manufacturer, or write ALUMINUM COMPANY OF AMERICA, PAINT SERVICE BUREAU, 1732-M Alcoa Building, Pittsburgh 19, Pa.

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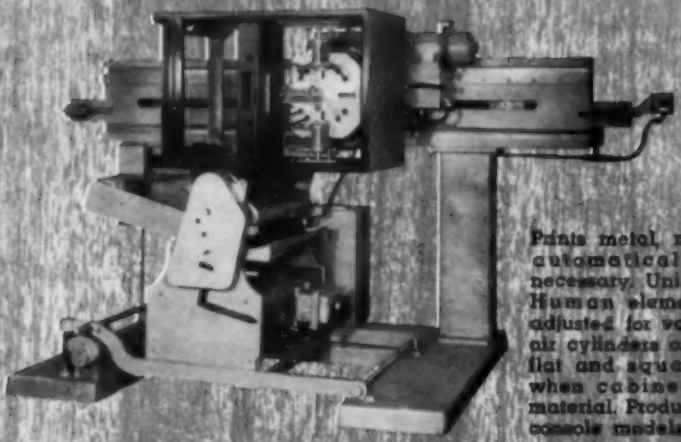
ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA



Prints metal, masonite or wood cabinets automatically. No jigs, no fixtures necessary. Uniform printing, no misprints. Human element eliminated. Quickly adjusted for various sizes. Cabinet held by air cylinders on inside, assuring a perfect, flat and square printing surface even when cabinets are made of thinnest material. Production-2 per minute on large, console models.

Wood

This machine is built in various sizes from the narrowest up to 38" wide, for the graining of various sizes and thicknesses of panels, tables and similar work. Can also be used for edge graining. Explosion-proof motor is mounted beneath a solid base, eliminating fire hazards.

This trademark SCHMUTZ recognized as builders of fine printing machinery since 1923.

This trademark is known not only in this country, but throughout the world for modern and highest quality printing machinery. Now manufacturing more than 60 different types and models.

VISIT OUR PLANT, SEE THE MACHINES UNDER CONSTRUCTION AND DOING ACTUAL WORK ON OUR TEST FLOOR.

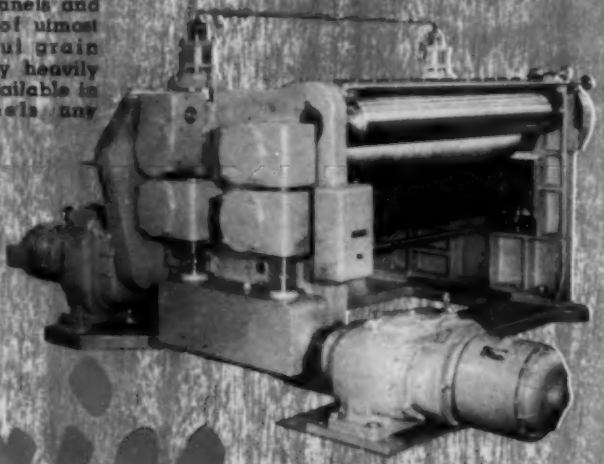
SCHMUTZ MFG. CO.

1600 W. MAIN ST.

LOUISVILLE 3, KY.

U. S. A.

Reverse Roll Coater for eliminating imperfections in hardboard panels and other sheet material, which is of utmost importance in securing beautiful grain effects. These machines are very heavily and accurately built and are available in two sizes for 36" and 48" panels, any length and up to 2" thick.



Grain

REPRODUCING EQUIPMENT

This large, heavy duty machine has been especially designed for printing unusually beautiful grain effects on large panels. Panels are automatically fed through the machine so that perfect registration of design can be had. Machine carries two sizes of engraved cylinders: 10" diameter for straight grain and 20" diameter where design of wood is such that repeating is objectionable. Standard size machines will handle panels 36", 48" and 84" wide, up to 12' long and from the thinnest to 2" thick.

This is the house that BETTER CLEANERS BUILT!

Twenty-five years ago Northwest Chemical Company was founded with the express idea of supplying BETTER cleaners to the trade.

Today, thanks to a steadfast adherence to the policy of top quality ingredients carefully blended with mature experience and pleasingly flavored with good service, Northwest has attained a position of respected leadership in the cleaner field.

A cleaner is only as good as the house behind it. Today's fast changing materials and methods quickly obsolete yesterday's products and create a need for completely new types of cleaners.

Northwest's continuing research program offers our customers the BEST advanced thinking, no matter what the problem. You are paying for Northwest's plus values wherever you buy. Why not avail yourself of them?

Northwest products are manufactured on the west coast by—
ALERT SUPPLY COMPANY • Los Angeles

OUR 25th YEAR

LO HI pH

NORTHWEST CHEMICAL CO.

9310 ROSELAWN DETROIT 4, MICH.

pioneers in pH cleaning control *serving you since '32*

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Industrial FINISHING

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For further information on what manufacturers have to offer —literature, products, supplies, etc., mentioned in the editorial departments, use "Reader Service" return card in the rear section of this issue, page 125.

FINISHING

DECEMBER, 1957, Issue

Reader Service Department

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Send your inquiries to

INDUSTRIAL FINISHING Magazine for information about technical paint coating problems, methods and processes; and for sources of supply for organic finishes, equipment and supplies to be used in connection with surface preparation and conditioning, paint application, sanding, paint drying and baking, rubbing, polishing, etc.

Surfaces to be completely or partially coated for protection, decoration or for any other purpose, include components and articles made of metals, plastics, woods, and composition materials; also paper, leather, rubber and fabrics.

The services of many testing laboratories, finishing consultants and special technicians are often available.

These inquiries are promptly answered. As a result, new products, materials and sources of information are continuously being uncovered; valuable contacts are made and timely suggestions for future articles to be published are often developed.

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Industrial Finishing Magazine

1142 N. Meridian Street

Indianapolis 4, Ind.

U. S. AUTOMATIC CORPORATION

AMHERST, OHIO

Announces a change in name of its wholly owned subsidiary

BEDE PRODUCTS CORP.

to

NORDSON CORPORATION

- EXPANDED MANUFACTURING FACILITIES
- NEW PRODUCTS
- NEW SALES AND SERVICE OUTLETS
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FEATURING:

AIRLESS SPRAY COATING EQUIPMENT AND BEDE PAINT HEATERS

Now we're doing more than ever to cut coating and finishing costs . . . . For complete information write

NORDSON CORPORATION

FORMERLY BEDE PRODUCTS CORPORATION

THE BEST IN SPRAY COATING EQUIPMENT

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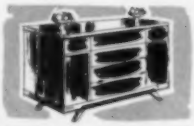
Above All...

PERFEX SATIN FINISHES

have long been recognized and acknowledged as the BEST synthetic varnishes made . . . . definitely "above all" other flats. Through the years, progressive improvements have been made in PERFEX so that today we offer a modern flat that is the ultimate, the Zenith in the flat finishes . . . . one without a peer or even an equal.

PERFEX was the original "flat" to be made by a new and different process, without the use of stearates or other flattening agents. NOW recent improvements have cut the dust free time, increased print resistance, reduced drying time, increased body and build, improved clarity and color . . . . all of which combines to produce a wonderful rubbed effect appearance and a pleasant waxed effect feel.

PERFEX SATINS are available in a full range of sheens to produce the exact rubbed effect and waxed feel you wish.

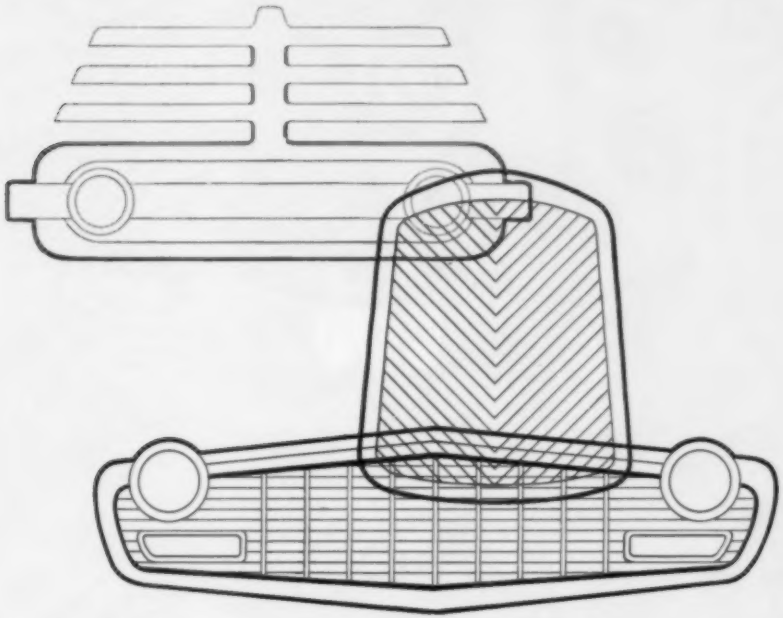


If you manufacture furniture and are interested in securing an excellent rubbed finish effect, we invite your inquiry.

PERFECTION

PAINT AND COLOR COMPANY

INDIANAPOLIS 2, INDIANA



Here's better protection for aluminum

Aluminum automobile grilles have a new kind of protection in durable, clear lacquers made from Eastman Half-Second Butyrate.

The outdoor performance of clear Half-Second Butyrate films is remarkable. Extremely stable to ultraviolet light, they do not whiten, peel or turn yellow on prolonged exposure to sunlight or severe weathering. They resist attack from water, gasoline, oil, steam cleaning, road chemicals, and strong detergents.

Half-Second Butyrate lacquers are easily applied by conventional spray equipment... air-dry in a matter of minutes..,and produce a good build with one coat.

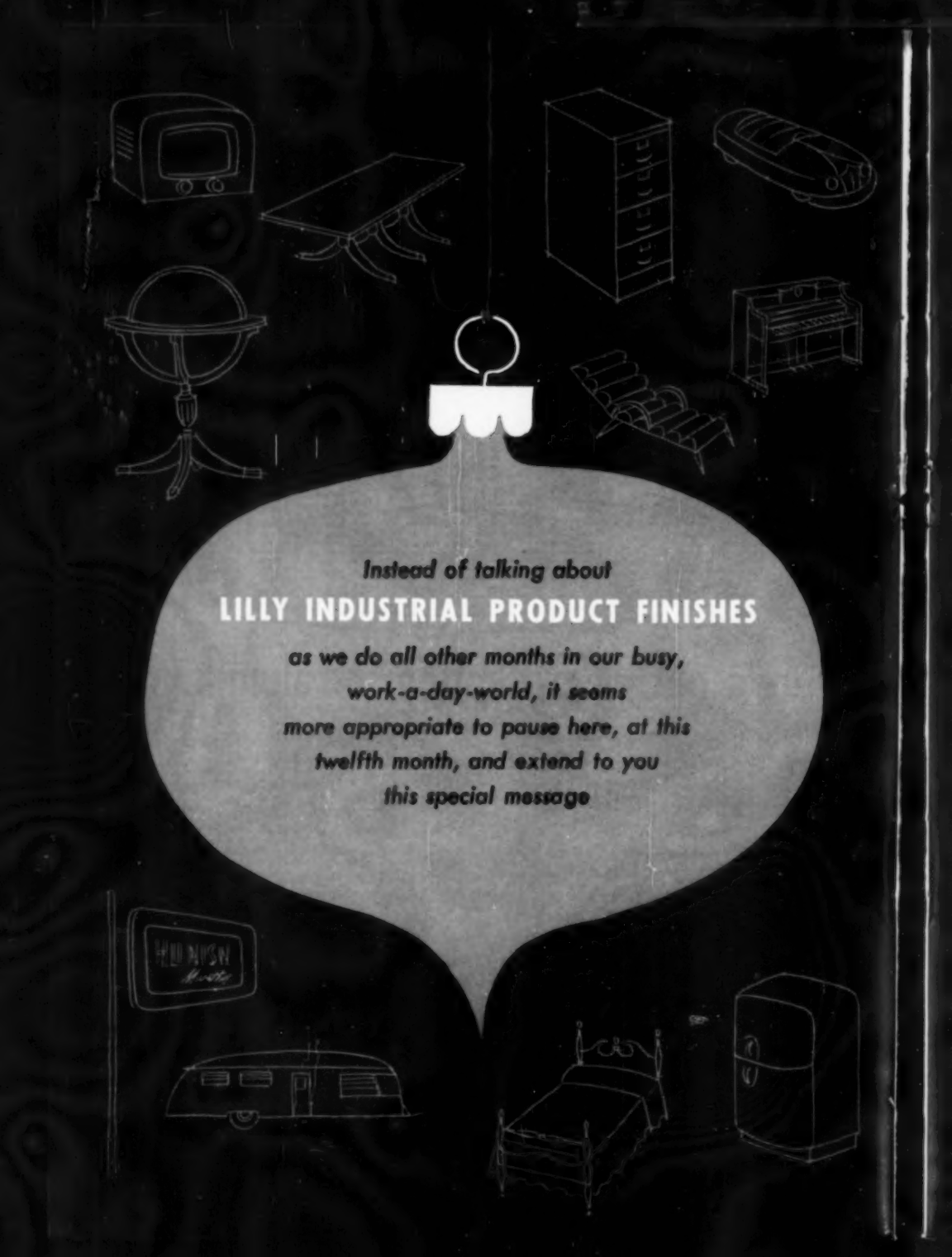
Half-Second Butyrate is highly soluble in such economical solvent combinations as ethyl alcohol and toluene. A low-density material, it offers users high coverage per pound of film former.

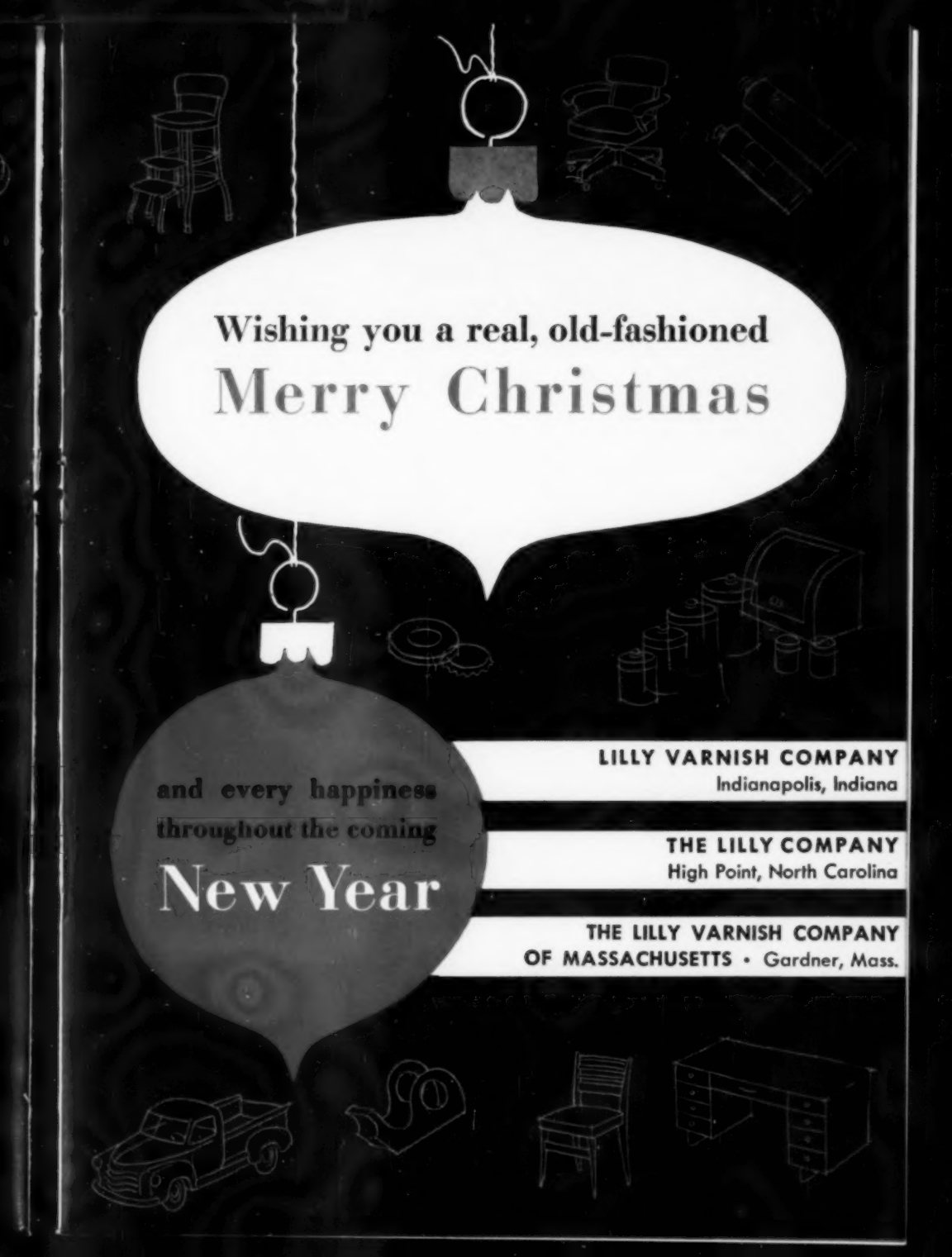
If you want to give your aluminum products clear and lasting protection, ask your lacquer supplier today for lacquers made from Half-Second Butyrate...or write us for more information.

HALF-SECOND BUTYRATE

an Eastman film former

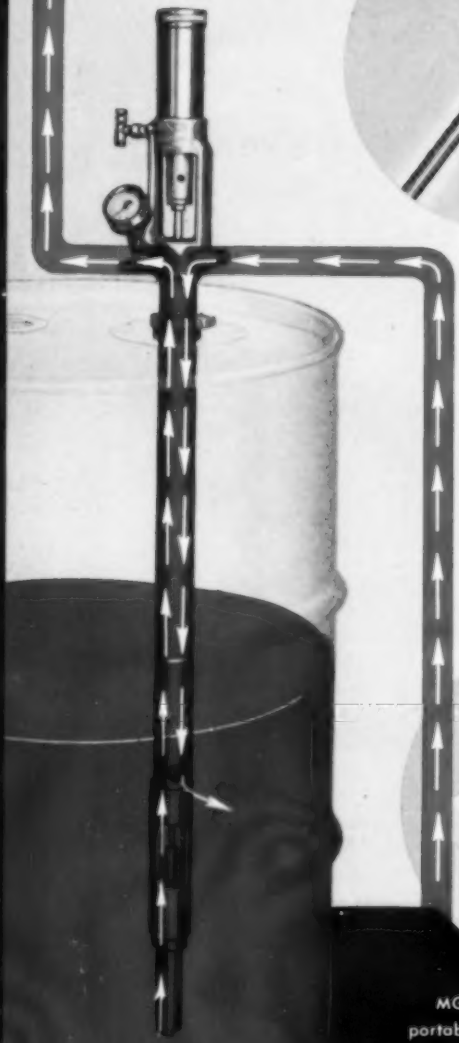
SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; New York City; Framingham, Mass.; Cincinnati; Cleveland; Chicago; St. Louis; Houston. **West Coast: Wilson Meyer Co.,** San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.


Instead of talking about
LILLY INDUSTRIAL PRODUCT FINISHES
as we do all other months in our busy,
work-a-day-world, it seems
more appropriate to pause here, at this
twelfth month, and extend to you
this special message


Wishing you a real, old-fashioned
Merry Christmas
and every happiness throughout the coming
New Year
LILLY VARNISH COMPANY
Indianapolis, Indiana
THE LILLY COMPANY
High Point, North Carolina
THE LILLY VARNISH COMPANY
OF MASSACHUSETTS • Gardner, Mass.

LIGHTWEIGHT—easy to remove from emptied drum and insert in new drum.

VERSATILE—auxiliary clamp lets you operate from rim of open drum.



MOUNTS WITH AGITATOR — portable drum cover lets you combine mixing and pumping operations.

All New... from Binks

17½ lb. material handling pump supplies up to 4 spray guns

Binks new "Pogo" bung-type air-operated material handling pump is a "lightweight" in pounds only. In all other respects it is a rugged, dependable performer. It cuts your material handling costs by letting you send paints and coatings direct from original shipping drum to your spray guns. The pump has plenty of power to supply up to four spray guns . . . either directly or through a paint circulating system.

Fits 2″ bung hole. No longer need a 2″ opening be a production bottle-neck. Binks "Pogo" pump puts the contents of a 55-gallon drum at your disposal. Delivers at the rate of one gallon per minute — enough to operate four spray guns simultaneously! At no time is the drum itself under pressure.

Operates from open drums. Attach an auxiliary clamp and the Binks "Pogo" pump is ready for use on the rim of an open drum. Where you must keep your materials constantly mixed, an agitator may be mounted with the pump on a portable drum cover. A wide variety of pump and agitator mounting combinations is available.

Economical to operate — maintain. Long, double action pump strokes insure steady delivery and they make maximum use of operating air. Rugged construction insures perfect, long-life alignment of moving parts — reduces wear. The pump needs no lubrication. Spaced design separates motor from pump — positively prevents fluids from entering critical air motor parts.

For complete information ask your Binks industrial distributor for a copy of Binks Bulletin 707. Or if you prefer, write direct to the address below.

Ask about our spray painting school

Open to all...NO TUITION...covers all phases.

7214

Binks

EVERYTHING FOR SPRAY PAINTING

SPRAY GUNS

AIR COMPRESSORS

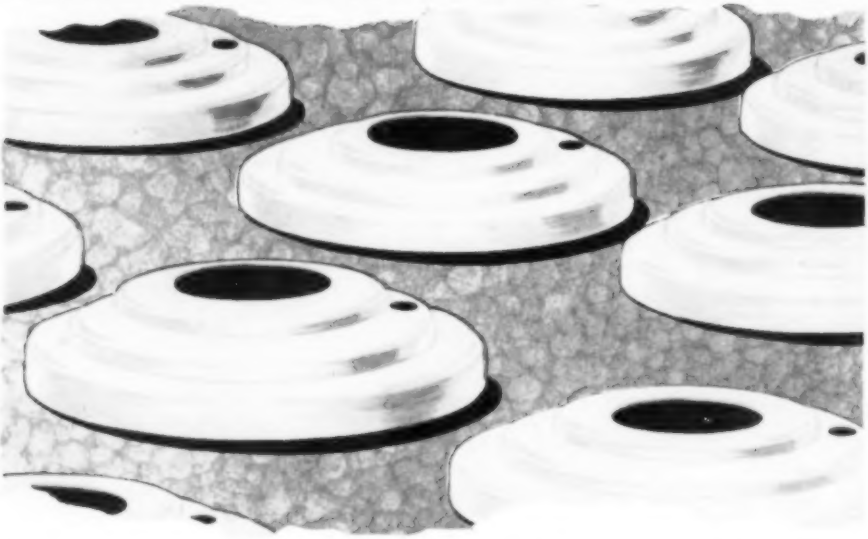
NATIONWIDE SERVICE

Binks Manufacturing Company
3116-40 Carroll Ave., Chicago 12, Illinois

REPRESENTATIVES IN PRINCIPAL U. S. & CANADIAN CITIES · SEE YOUR CLASSIFIED DIRECTORY

How is your paint mileage—
You'll get more with Tousey's

NEW HAMMERCOTE®



Here is a hammer finish that goes on lightly, with a remarkably distinct pattern producing a high lustre, extremely hard, mar-proof surface.

In addition, Tousey Hammercote, by test with leading competitive finishes, has produced an average of 10% more parts per gallon. If you are interested in saving money on your finishing operation, without sacrificing quality—use Tousey's NEW Hammercote.

TOUSEY PRODUCTS
DURACOTE for DURABILITY

TOUSEY VARNISH COMPANY

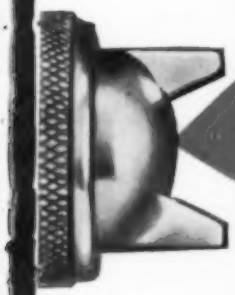
520 West 25th Street • Chicago 16, Illinois • VIctory 2-2200

YOUR

OVERHEAD

IS

OVER HERE



The overspray in your water curtain is a cause of overhead cost. While the overspray cannot be eliminated, the cost of removing deactivated paint from the spray booth tank and the water circulating system can be.

Periodic filtration of paint spray booth wash water prevents deactivated paint from settling to the bottom of the tank by removing the paint matte while it is floating. Recirculation of the paint in the system is prevented and water nozzles remain foul-free. Such maintenance costs are eliminated.

Only Delpark offers filtration for paint spray booth wash water. A Delpark field engineer will be glad to show you how you can save on operating and maintenance costs.

Delpark

PAINT SPRAY BOOTH WATER FILTERS

. . . FIRST in Filtration Advancement

Backed by more than 40 years experience in Industrial Filtration

INDUSTRIAL FILTRATION COMPANY • 96 INDUSTRIAL AVE., LEBANON, IND.

Conditioning and Painting the Surfaces of

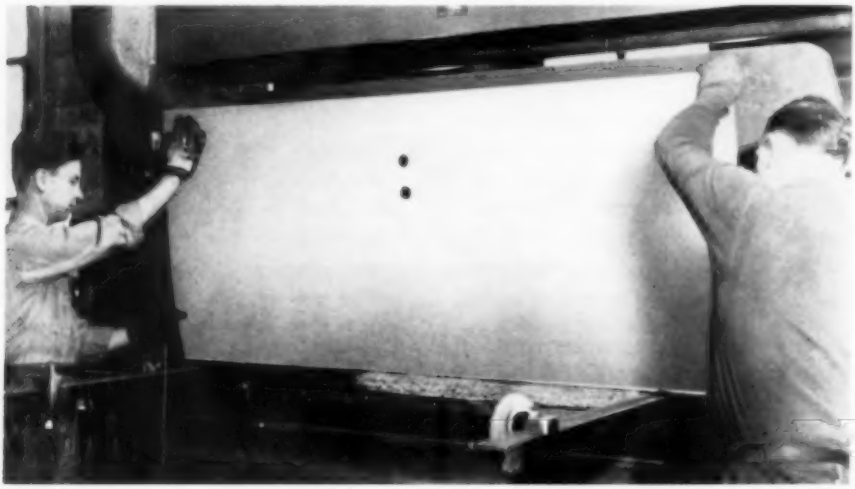
ZINC COATED STEELS

By Lester F. Spencer, Consultant

ZINC COATED STEEL, which is produced by a method commonly referred to as "galvanizing," is a widely used engineering material due to its relatively high resistance to atmospheric corrosion. The initial method of producing galvanized sheet, which is still available, is the "hot dip" process. This method of galvanizing has been found quite useful on certain consumer products which require little or no mechanical shaping.

Formerly, when a product or part to be made required severe press forming to produce a specific shape, ordinary galvanized hot dipped sheets were unsatisfactory due to the flaking of the protective coating. The reason for this objectionable flaking was traced to the formation of a thick brittle iron-zinc alloy layer that formed at the interface of the base metal and the deposited coating of zinc.

After years of research, it was found that an addition of aluminum to the molten zinc bath minimized this brittle zone. This experience led to the development of a new product in which the zinc coating



Phosphatized zinc-coated steel will form readily without any flaking or peeling of the protective coatings. Here a sheet is being flanged to form the side wall of a shower cabinet. Photograph, courtesy of Armco Steel Corporation and Fiat Metal Manufacturing Company.

OVER-SPRAY and FUME CONTROL

Assured With This CROSS DRAFT, FLOOD SHEET TUNNEL TYPE SPRAY BOOTH

by PETERS-DALTON

TUNNEL TYPE SPRAY BOOTH —BUILT AND INSTALLED BY PETERS-DALTON — NOW IN SERVICE AT THE NEW LINCOLN DIVISION PLANT, WIXOM, MICH.

Loss of time and impairment of working conditions is eliminated in finishing operations with an installation (such as illustrated above) by P-D. While the tunnel type booth shown was designed, engineered, built and installed by Peters-Dalton for a major automotive manufacturer, a comparable or smaller cross draft, flood-sheet booth may be the answer to your finishing problem. The size of your product or production run quantities may not require as large an installation. However, regardless of your needs, Peters-Dalton can design a finishing system to best and most efficiently meet your production finishing requirements.

Peters-Dalton offers more than a quarter century of designing, engineering and building finishing systems of all sizes and types. Low initial cost and economical production runs can be yours with an installation by P-D. Why not send us your specifications or prints? Just write, wire or phone . . . we'll be glad to tell you more.

Representatives in Principal Cities

- Hydro-Whirl Paint Spray Booths
- Industrial Washing Equipment
- Drying and Baking Ovens
- Hydro-Whirl Dust Collecting Systems

P D Peters-Dalton INC.

A SUBSIDIARY OF DETROIT HARVESTER CO.

17991A Ryan Road • Detroit 12, Michigan

adhered so tightly that the sheet of steel could be severly worked without this objectionable flaking. The production of this type of coating has spread so that the major producers of galvanized steel of this type can offer a hot dipped strip produced from a continuous galvanizing line.

Since the introduction of continuous galvanized strip, with its favorable forming characteristics, the application of this material in consumer goods has increased to a considerable extent. A few of the many applications include architectural interiors and exteriors; household appliances, as exemplified by washers, ironers, ranges, incinerators, heaters and freezers; commercial equipment such as gasoline pumps, fluorescent light fixtures, office furniture, beverage coolers, vending machines, and automotive sheet metal component parts such as both truck and trailer roofing and sides, school busses, oil filters, trim and license plates.

In conjunction with the development of galvanized products, the finishing of this material had to be given equal consideration. While it is true that zinc coated surfaces can be painted, nevertheless it is often a troublesome and costly job. The necessity of etching the surface with acid or using special primers always means higher costs and sometimes delays in manufacturing. In addition, the use of acid etching may destroy part of the protective zinc coating.

Even these treatments do not always solve the basic problem, since the raw zinc surfaces have a tendency to dry out the elastic oils in paint and cause brittleness. As a result, when the paint dries out, it will often peel from an untreated zinc surface. This experience has led to the development of a mill treated finish. The method employed by Armco Steel Corp. consists of subjecting the zinc coated steel strip to a hot, balanced zinc-phosphate solution containing a nitrate and a metallic accelerating agent. It is then rinsed in clear water, and followed by a rinse in a dilute chromic acid solution.

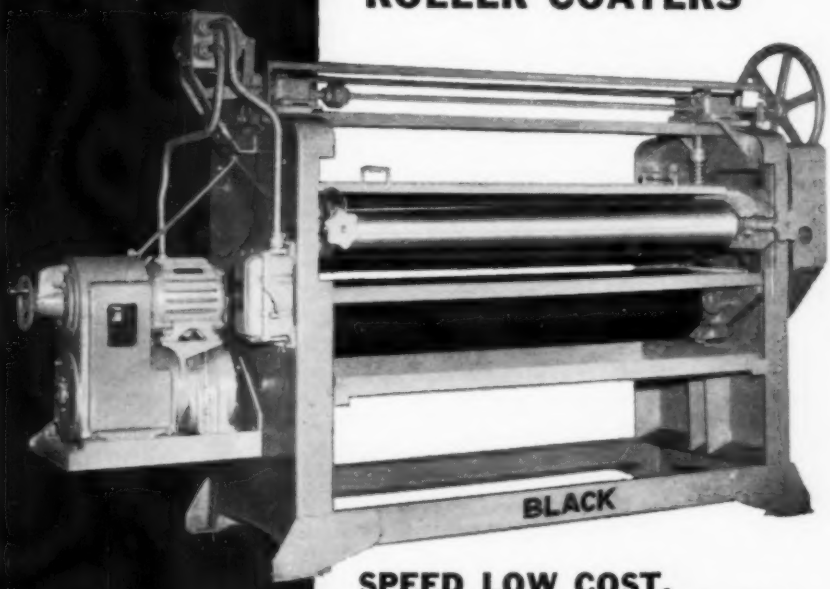
Storage Problem With Treated Metal Surfaces

Before we consider the recommended practices for painting phosphate-coated galvanized material, it is appropriate to discuss the storage problem. This material can

Panels (for shower bath cabinets) with a baked enamel finish emerge from the oven. Baking time is of the utmost importance; extreme care must be exercised in following schedules recommended by your paint manufacturer. Photograph, courtesy Armco Steel Corp. and Fiat Metal Mfg. Co.

BLACK BROTHERS

HEAVY-DUTY ROLLER COATERS



FEATURES

- 21 Standard Sizes From 8" to 122" Wide Capacities
- 0-4½" Thickness Adjustment
- Single or Double Coaters
- Patented Safety Control
- Drip-Proof Reservoirs
- Precision Ground Rolls
- Ball Bearing Throughout
- Micrometic Adjustments
- Single or Variable Speed Drives

Plus many extra-value optional features

SPEED LOW COST, HIGH QUALITY COATING

Whether your finishing needs are intermittent or geared to 24-hour-a-day automation, Black Brothers Roller Coaters can boost your production, reduce down-time, cut coating costs. These are heavy-duty machines, built rugged and rigid to *maintain* high quality production and trouble-free performance. Heavy distortion-free rolls apply *uniform* coatings — assure longer coating roll life. Chrome coated oversize doctor rolls give finer doctoring action.

Versatile, economical — Black's Roller Coaters apply lacquers, paints, sealers, varnishes, waxes, etc. to flat work such as wood, metal, plywood, composition board, hardwood, plastic, cardboard, cement board.

Write today for literature describing the oldest — most complete line of roller coating equipment, available with plus-value optional features to meet *your* finishing needs.

THE BLACK BROTHERS CO., INC.
Mendota 1, Illinois — *SINCE 1882*

be stored for prolonged periods without injury to the treated coating. However, a clean dry storage area should be selected. As with all products to be painted, the surface must be clean to assure lasting paint adhesion; and it must be dry to prevent the formation of blisters, either during or after the painting operation. If it is at all possible, the storage room should be heated during the winter season.

Chemicals, especially salts, alkalies and acids, should not be used or stored in the same general area. If the sheets of steel become damaged because of poor storage conditions, the original value of their surface treatment can often be restored. Usually it is best to refer this problem to the supplier, who will send a representative to estimate the extent of damage and suggest a method to restore the paint holding film.

Press Work Damage to Surfaces Can Be Repaired

Regardless of the care that is taken during press working operations, some of the paint holding film will be scraped off. In extreme conditions, the scraped surface may be quite large. Minor scratches are not so important since the treated surface all around the scratch is sufficient to preserve the elasticity of the paint. The drying-out action of the exposed zinc will be confined to such a small area that it will not materially offset the insulating value of the phosphate film on either side.

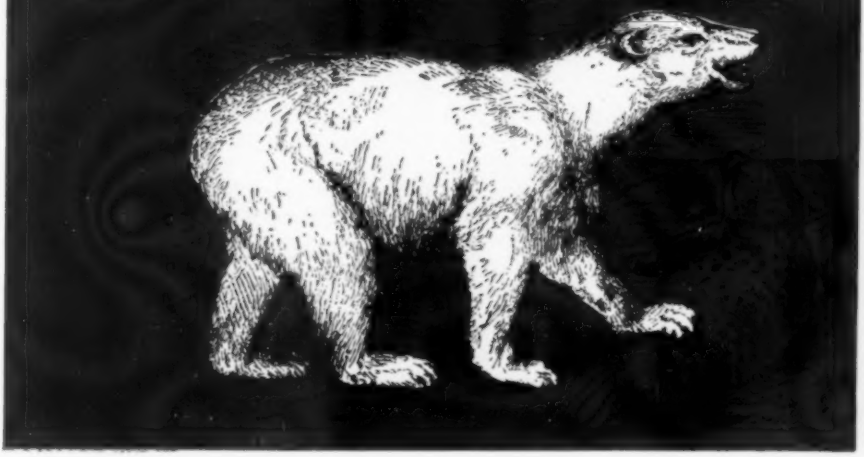
If the scraped surface is comparatively large, especially at corners or bends, the fabricator can assure complete film coverage by applying a touch-up solution. One solution recommended by Armco Steel may be applied at any areas by brushing, spraying or wiping. At least two minutes should be allowed for the touch-up solution to react. After this the treated areas are sponged with water. Treated metal sheets and formed components should not be painted until they are thoroughly dry.

Cleaning Prior to Painting; What to Use; What to Avoid

Due to the accumulation of soil during shipping, storage or actual fabricating, a cleaning operation is needed prior to painting. Organic cleaners, such as naphtha, benzine and lacquer thinners are among those recommended. The use of strong acid or alkali cleaners must be avoided since they will damage the paint-holding qualities of the treated surface. Sanding or other mechanical roughening will also destroy or reduce the value of the phosphate film. When a lubricant must be removed from a fabricated item, commercial vapor degreasing machines are excellent. The solvent is usually trichlorethylene or a related solvent; this solvent vapor has no detrimental effect on the phosphatized surface, provided the solvent is kept "clean and sweet".

For production line cleaning, where a pressure spray is available, emulsion cleaners or very mild alkalies may be used. The emulsion cleaner can be made more effective by adding small amount of a mild alkali, usually 0.1 to 0.2-oz. of orthosil per gallon. The emulsion usually consists of four to five gal-

DURAPOL... a new, one coat, whiter white enamel



Offers a whiter ... more reflective finish for metal surfaces!

Unlike the coats of the Arctic Hare and the Arctic Fox, which darken with Summer, the Polar Bear's coat remains white the year 'round. Nature has given him *continuous protection* against the Arctic background!

DURAPOL, a new addition to our family of more than 50,000 *exclusive* formulas, is a synthetic baking enamel that also provides unique protection. One coat, for example, not only provides a *whiter* white than ordinary white enamels, but a white that is ultra-resistant to *yellowing!* As for hiding qualities, **DURAPOL** provides excellent opacity .and thus, exceptional mileage too! It is available in unlimited colors, all offering advanced **DURAPOL** characteristics. Typical applications include home appliances, lighting fixture reflectors, and all products requiring good ultraviolet, salt spray and stain resistance.

Write for information today!

M&WCo 1876

Leadership in finishes since 1876

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lons of emulsifying oil and 12 to 14 gallons of kerosene per thousand gallons of water. According to the experience of Armco Steel, several brands of emulsion cleaners have been found satisfactory.

Follow With Suitable Rinse; Dry off; Use Clean Gloves

If cleaners are to be used, the operation must be followed by a thorough water rinse, and then preferably by a rinse in hot dilute chromic acid (0.2-oz. per gallon). To make sure that the sheets or formed component parts are dry, forced drying at 225° to 250° F. is recommended. Suppliers of emulsions, alkalies and solvents provide detailed instructions for the use of cleaning solutions, the operation of equipment, and maintenance work.

After cleaning the metal surfaces it is advisable to handle them with clean gloves before painting to avoid making fingerprints and grease marks. When fingerprints or grease spots are known to be present, they can be easily removed by cleaning the surface with a solution composed of 2½ parts of naphtha, 2½ parts denatured alcohol and one part isopropyl alcohol. The isopropyl alcohol is termed a "coupling agent" which permits complete blending of the denatured alcohol and naphtha. Only washed cloths should be used in cleaning. The sizing residue in unwashed cloths will cling to the surface of phosphatized sheet metal parts.

After the cleaning operations have been completed, it is well to keep this point in mind: All sheets must be thoroughly dried before painting. This is especially important for all thermal-setting types of baked finishes; these will be marred by small blisters after baking, if the sheets are not completely dry before being painted. Other points to be emphasized include: 1) Never apply strong commercial acids or strong alkaline cleaning solutions to the surface of phosphatized steel, and 2) avoid any sanding or other mechanical roughening.

Recommendations for Painting; Baked Enamels; Lacquers

Any paint system may be applied to properly phosphatized zinc-coated steel, without acid etching or other pre-treatments. However, it is necessary to select the right type of paint or the service conditions anticipated.

Alkyd enamels have long service records. They are more resistant to scouring and abrasion than ordinary oil-base paints. This property will indicate the choice of an alkyd enamel for such items as signs, tables, refrigerators, cabinets, lawn furniture and automotive component parts.

For exterior service, alkyd enamels are often blended with certain drying oils to produce a finish of high resistance to the effect of temperature changes and weathering. This type of finish can be either an air dry or a bake type of enamel. When the latter type is employed, the baking time is usually about one hour at 260° F.

Melamine or urea formaldehyde can be used in modifying alkyd enamels to shorten the baking time. However, it is advisable to use these modified finishes only when exact control of both time and tem-

perature of the baking cycle can be maintained. Proper baking is of the utmost importance since these protective coating materials do not air dry to produce the required impervious film. Finishes containing urea formaldehyde or melamine have a broad application in products such as metal furniture, cabinets and toys.

Lacquers are also used for finishing truck and automobile bodies, signs and furniture. This type of finish air dries quickly by evaporation of the solvent. By modifying a suitable lacquer with the right kind of plasticizer or alkyd resin, resistance to both rust and abrasion can be improved. Lacquer enamels are generally protected by clear coats or by wax to give long satisfactory outdoor service. Lacquers in combination with alkyd resins are recognized as being among the most important semi-synthetic finishes for metal products. Alkyd resins are suitable for use in both air drying and baking finishes, for both interior and exterior exposures. They combine flexibility with toughness and color retention.

When using lacquers as a finish, it is almost always advisable to apply a good primer as a ground coat. If baked finishes are employed, the paint manufacturer will usually recommend a suitable primer. Asphaltic base paints and car roof cements, that are used for roof protection and for industrial painting in general, can be used satisfactorily on phosphatized zinc-coated steel panels.

Acknowledgment is made to W. E. McFee and N. E. Hays of Armco Steel Corp., who have aided the author in the preparation of this manuscript.

G. E. Landis Joins Wyandotte Chemicals Boston Field Staff

George E. Landis recently joined Wyandotte Chemicals as Industrial Sales Representative in the Boston, Mass., area, covering also Providence, R. I. and the surrounding area.

Mr. Landis has represented three nationally known firms in the field and in control and engineering laboratories.

Before being assigned to the Boston district, Mr. Landis was given intensive training in the application of Wyandotte Industrial Products at the Wyandotte Chemicals Industrial Research Laboratories in Wyandotte Mich., and field training under the supervision of metal finishing experts.

Hathaway Moved Up in Oronite

Norman E. Hathaway has been elected director and vice president in charge of marketing for Oronite Chemical Co., San Francisco, Calif.

In his new job, Mr. Hathaway will direct all marketing of Oronite chemical products through company sales offices in the United States and overseas.

Formerly Oronite's general sales manager, Hathaway succeeds Milton L. Baker, who has retired. His headquarters will continue to be Oronite's home office at 200 Bush St., in San Francisco.

D. A. Gilbert; Industrial Systems

The Industrial Systems Co. announces the appointment of Donald A. Gilbert of the Production Heating Equipment Co., 13231 Euclid Ave., Cleveland 12, Ohio, as its representative for the state of Ohio.

Industrial Systems Co., Matawan, N.J., manufactures all types of metal cleaning and processing machinery, as well as paint bake ovens and spray booths.

"Dave, that Dow Methylene Chloride sure cured our stripping problems with masking lacquer"

"It sure did, Jess. It takes minutes to do jobs that other cleaning and stripping compounds take *hours* to do."

"Wonder why?"

"Two reasons. One is high solvent power. Dow Methylene Chloride penetrates coatings faster. The other is that it immediately starts an evenly distributed lifting action that really loosens things up."

"Would it strip those new parts we got in last week?"

"Probably would. They use Dow Methylene Chloride for all sorts of formulations to strip paint, varnish, lacquers and epoxy resins. Good vapor degreasant, too. Sometimes it's possible to use methylene chloride in a common vapor degreaser."

"Is it safe, Dave?"

"It's nonflammable and carries a low toxicity rating—the MAC is 500 ppm. Very stable, too!"

"Sounds better all the time. Tell me more."

"That's all I know, but the Dow people can answer all your questions. Why don't you write them a note?"

"Who?"

"You know, they make Dow Perchloroethylene Industrial and Dow Trichloroethylene for vapor degreasing, and Chlorothene® for cold cleaning. THE DOW CHEMICAL COMPANY, Midland, Michigan."

YOU CAN DEPEND ON DOW

An Approach to TESTING SAMPLES of Organic Finishes

By F. Warren Porter*

EVERY SUPERVISOR of the application of industrial finishes devotes a great deal of time to the business of testing materials, whether it be an entirely new material or a competitive sample from another vendor. Depending upon the approach, this test work can involve considerable time and expense or it can be dispensed with quickly at a minimum of cost. While the performance and relative merit of a material must, in the final analysis, be judged on the production line it is not a good idea to introduce a new sample of a material directly into the hustle and bustle of production facilities.

The finishing material that can cope with the many variables of line speeds, oven temperatures, human elements, metal pre-treatment conditions, and perform completely satisfactory on the first exposure to these conditions is rare indeed. Minor adjustments usually have to be made in formulation, amount of reduction, and solvent blends to obtain the required results in quality of the finish. [*Cont'd on page 40*]

The Author with spray gun at small booth.

*Finishes Technician and Quality Control Manager; Container Division, Rheem Mfg. Co., Sparrows Point Plant.

What equipment a user of finish materials needs for a modest laboratory to make practical and reliable tests on coatings to meet certain requirements. Why it is profitable to make these tests quickly to get accurate information for early decisions.

ACETATES Amyl, Normal Butyl, Secondary Butyl, Ethyl, Isopropyl, Normal Propyl

ALCOHOLS Normal Butyl, Secondary Butyl, Isopropyl, Methanol, Proprietary Ethyl Alcohol, Normal Propyl

ALKALIES Caustic Soda, Trisodium Phosphate

ALKANOLAMINES Diethanolamine, Di-Tri-Isopropanolamine, Monoethanolomine, Monoisopropanolamine, Triethanolomine

AROMATIC SOLVENTS Benzol, Toluol-Xylol, Heavy Aromatic, SC Solvents #1, 2, 3, 28, 100, 150, and 450

CHLORINATED HYDROCARBONS Carbon Tetrachloride, Chlorothene, Ethylene Dichloride, Methylene Chloride, Orthodichlorobenzene, Perchlorethylene, Propylene Dichloride, Trichlorethylene, Trichlorobenzene

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GLYCOLS Diethylene, Dipropylene, Ethylene, Propylene, Triethylene, Tripropylene

KETONES AND ETHERS C. P. Acetone, Diacetone, A.F. Methyl Acetone, Methyl Ethyl Ketone, Methyl Isobutyl Ketone, Ethylene Glycol Ethers, Propylene Glycol Ethers

NAVAL STORES Dipentene, Pine Oil, Turpentine, Gum & S.D. Wood, Rosins, Gum & Wood, Modified Rosins, Resinates

ALIPHATIC-HYDROCARBONS Heptane-Hexane, Mineral Spirits, Odorless Mineral Spirits, Benzene (VM&P) and other standard and custom Aliphatic-Naphthas.

OILS AND FATTY ACIDS Linseed Oil, Tallol, Tallol Fatty Acids

STEARATES Aluminum, Barium, Calcium, Iron, Lead, Manganese, Magnesium and Zinc

WAXES Emulsifiable, Dip Wax, Paraffin, Plastic Waxes, Sugar Cane Waxes

OTHER PRODUCTS Plasticizers, Weed Killers, Anti-Freeze, Chlorinated Paraffin

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THE SOLVENTS AND CHEMICALS GROUP
2540 West Flournoy Street • Chicago 12, Illinois

What Facilities You Need, and What Tests You Can Make

Test work done with production equipment and people falls in the category of considerable time and expense testing. The minimum cost approach to test work is performed with a modest investment in equipping a plant laboratory. A sensible testing laboratory can be set up around the following equipment.

1) Electric baking oven, one cubic foot baking chamber, 0 to 500° F. temperature range.

2) Spray booth, dry booth type, 2 x 3-ft. opening, with exhaust fan.

3) Spray gun, the type used in production, with pressure type feed cup.

4) Weight per gallon cup.

5) Scale; any type that will weigh to .1 grams, with set of gram weights.

6) Viscosity cup; No. 4 Ford cup.

7) Film thickness gage; a G.E. dry film gage.

8) Temperature recorder; smoke chart, clock type.

9) Gloss meter, 60° portable type.

10) Fineness of grind gage, scale 0 to 8.

11) Wet film thickness gage; Interchemical, 0 to 4-mil range.

With the equipment just listed, the following tests can be made in the laboratory.

1) Gloss; 2) Color; 3) Hardness;
4) Hiding (mileage);
5) Mar resistance; 6) Flow;
7) Weight per gallon;
8) Cleanliness of material;
9) Viscosity; 10) Flexibility.

The temperature recorder is necessary to check the time and temperature of the production equipment for correlation to the lab. oven. This item, as well as all of the others, will do double duty in both the testing of samples and producing quick answers when trouble shooting is to be done.

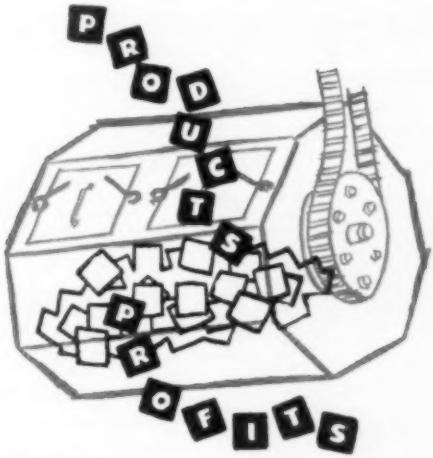
It Costs Something But You Learn First Hand, and Fast

Having been over the road before, it is usually necessary to stop at this point to do a selling job to the plant manager or superintendent, with regard to the price tags on this lab. equipment. Raised eyebrows are in evidence when "money talk" is made about buying a finishes supervisor some testing equipment for a small lab., because it seems to be a little too far removed from production problems. These are tools of the trade and just as necessary as electricity is to your electricians.

Mr. Boss, you can believe this: This lab. equipment will pay for itself in six months on reduced finishing material costs alone. The pay off will be even quicker if you include the few costly hours of production downtime it will save when you can trouble shoot future problems in the lab. instead of on the production line.

What You Use for Comparison and Why

To effectively evaluate a finishing material it is necessary to have a standard of some sort for comparison. If the sample is something entirely new, then the standard will have to be a set of requirements put down on paper; here you indicate what you are looking for in



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One of the greatest money-saving opportunities in metal-working lies in the use of barrels to finish parts by the hundreds in place of conventional methods that finish one part at a time.

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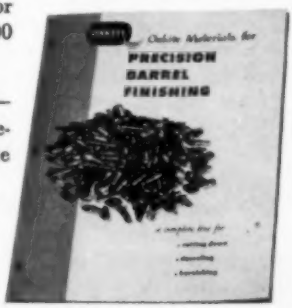
One Oakite customer changed to barrel methods to deburr curved stainless steel strips that are 14 inches long. The cost for deburring 20,000 strips was reduced from $3,000 to $125.00.



FREE For a copy of "*Precision Barrel Finishing*"—containing valuable information on cutting down, deburring, descaling, and burnishing—write to Oakite Products, Inc., 32F Rector St., New York 6, N. Y.

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this material. If the material is a competitive sample or a new approach to a coating now in use, then the present material should be used for comparison. The word "used" means just that.

Above: Color control panel board. On table are testing instruments; left to right: gloss meter, scale, weights, weight per gallon cup (on scale) grind gage, wet film gage, dry film gage and temperature recorder.

As you take the new sample through your group of tests, run the old material with it step by step. This will help you to make sure that you are not kidding yourself into making assumptions based on memory of what happened on the production line several weeks ago when so and so was the case. For example, try testing a freshly baked paint film against paint on a panel baked a month ago—and be honest with yourself when you decide which film is the harder or more mar resistant.

The use of this "buddy system" in testing finishes is just as important as it is in swimming. Having that comparison panel along may keep the new sample from getting "drowned" before it has a fair chance to prove itself. It may be worth mentioning at this point that the average pint or quart of sample material submitted for test is worth at least $50 in time, material and effort to the company that furnished it. This is particularly so if it required one or more grinds on the lab. mill to hit the right color or some other special requirement.

A Break-down of Testing Procedures

The testing of a sample can be broken down into two parts. One part includes the tests that are run on the wet sample, and the other the tests run on the dried or baked film. Be sure to mix the sample thoroughly before making tests.

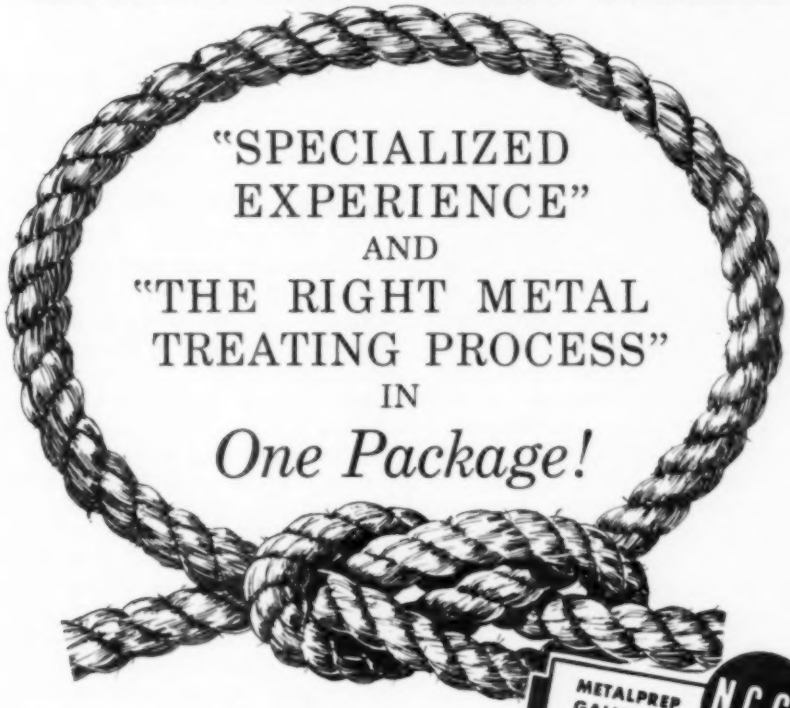
Wet Sample Tests

Fineness of Grind. A draw-down on a fineness-of-grind gage permits a quick determination of the proper pigment dispersion (grinding) and also the cleanliness of a material. Poorly ground material or one that contains excessive amounts of foreign matter (skins, gels, lint) will have an unsightly appearance, lower gloss and poor mar resistance.

Viscosity. For good application results, a proper viscosity range is essential and all future batches must hold within this range. Timing the flow of the material through the orifice of a No. 4 Ford viscosity cup will set the standard and indicate from experience the amount of reduction with thinner necessary for a particular method of application.

Weight per gallon. Checking the weight per gallon of the material by using a calibrated weight per

TIE IN GOOD PRODUCT DESIGN WITH A FINE PAINT FINISH



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gallon cup sets a valuable standard for future reference. Receipt of batches of material that vary in either direction from this weight factor indicate too much or not enough reduction with thinner, change in total solids or pigment percentages. With this weight per gallon figure it is easy to check gallonage in drum shipments by dividing the weight per gallon into the net weight figure shown on the head of the drum.

Spray Application. Using a pressure feed cup gun to spray the sample will permit determination of correct reduction and viscosity for production application. Measuring these applied films with a wet film thickness gage will show how much material must be applied to meet hiding or dry film thickness requirements. Dividing this wet film thickness reading in mils (1-mil) into 1.6 and moving the decimal point three places to the right in the answer will give you the theoretical amount of square feet per gallon of coverage (1600-sq.ft.). Dividing this figure into the cost per gallon will develop the necessary cost per square foot for price comparisons.

Laboratory ovens, spray booth, spray gun.

When spraying this material, flow or leveling can be checked by applying a heavy film (low atomization pressure, high fluid pressure) to produce a splatter effect on the panel. By placing this panel in a horizontal position and checking it after a few minutes, flow characteristics are easily compared with the standard material.

Dried or Baked Film Tests

Dry film thickness. A G.E. dry film thickness gage can be used to measure the resulting dry film obtained on panels previously run, to determine hiding at specific wet film applications. These measurements can be used at a later date to set up production procedures. For example, if a sample tested in the lab. gave good hiding at 2.1 mils wet film application, measured 1.0 mils dry film, had a viscosity reading of 30 seconds through a No. 4 Ford cup, was applied with 10-lbs. fluid pressure and 45-lbs. atomization pressure, then this same material applied in production equipment in the same way should yield the same end result in dry film thickness.

Gloss (specular). For uniformity of product, a gloss standard is necessary. By using this instrument in making lab. tests on new samples to ascertain conformance to specification requirements, satisfactory results, as to quality, are assured in production at a later date. Varying gloss measurements on mixed components, after line assembly, have an adverse effect on the visual color match of the assembled parts. This is often the case where two or more vendors

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You save on production time, you prevent loss of material and you improve the quality of your finish when you use Young Brothers Ovens. They are engineered and built to meet the most exacting requirements and are backed by more than a half century of experience devoted to the development of Batch and Conveyor Ovens for new processes, materials and products.

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1835 COLUMBUS ROAD **Cleveland 13, Ohio**

supply the same color of coating used on the same parts, and periodic switches in vendors are made in dividing purchase volumes.

Hardness; Mar resistance. Many elaborate pieces of testing equipment are available for measuring numerically the hardness or mar resistance of a coating. However, by drawing a pen knife blade or a thumbnail across a test panel and then doing the same thing to a standard panel, a reasonably accurate comparison can be made. The standard and test panels should have been sprayed and baked at the same time before making this type of test.

Fabrication. Bending a test and standard panel 180° over a ⅛-in. or ¼-in. round rod will permit checking the relative flexibility and adhesion characteristics of a coating. The best method is to pick out some small fabrication operation in the production line and run panels through this operation. A lock seaming operation or small blank and draw operation usually give a pretty fair comparative test. Once you pick this test operation, stick to it on future work. Jumping around from one type of operation to another may become confusing due to different conditions.

Color. Visual comparison of one of the sample panels to the standard will show whether you have a good color match or not. Mark these color panels (both standard and test) and hang them on hooks on a color board mounted on the wall of the lab. They will be handy for future reference.

Once you have completed these tests, the most important thing to do next is to make a complete written record of exactly what work was done and the results obtained. The writing of these notes may seem a nuisance at the time, when all of the results are fresh in mind, but months later you will be glad you have a reference when the need arises to re-check a material.

If the material tested in the lab. compared favorably with the standard, the transition to a small production test on the line causes no undue strain. On the other hand, if the sample is found lacking, request the necessary changes and ask for a new sample. Even if the change is a minor one, take the time to re-check the new sample in the lab. against the previous sample submitted, as well as the standard. This change may have affected one of the other characteristics of the material that could well cause a large size headache by hitting the production line without making this re-check.

The laboratory testing of a material, performed by someone who has done it once or twice before will require no more than two hours. This will be the case if there are no complicated exterior or chemical exposure requirements involved. Two or three different samples can be run at the same time, once some experience has been obtained in procedures. Compare this cost to having to run the same sort of tests through production equipment, and the pay off with this approach should be pretty obvious. On top of this the vendor and the sample will have a much better opportunity to show whether or not they can deliver the goods. [END]

"JOB SHOP" finishing with KIRK & BLUM oven

A job shop never knows what product it may process tomorrow. Yet, designing an oven for that type operation was no mystery for KIRK & BLUM'S experienced engineers.

The resultant "A" type oven shown below accommodates the wide variety of products finished. To allow space for storage and packing below, the oven is mounted above the floor on structural steel supports.

Consult KIRK & BLUM for your oven needs. There's no obligation. Write for "Ovens for Industry" catalog, just released.

The Kirk & Blum Manufacturing Co.
3131 Forrer Street, Cincinnati 9, Ohio

Gas-fired, re-circulating automatically controlled, fully protected 3 pass oven.

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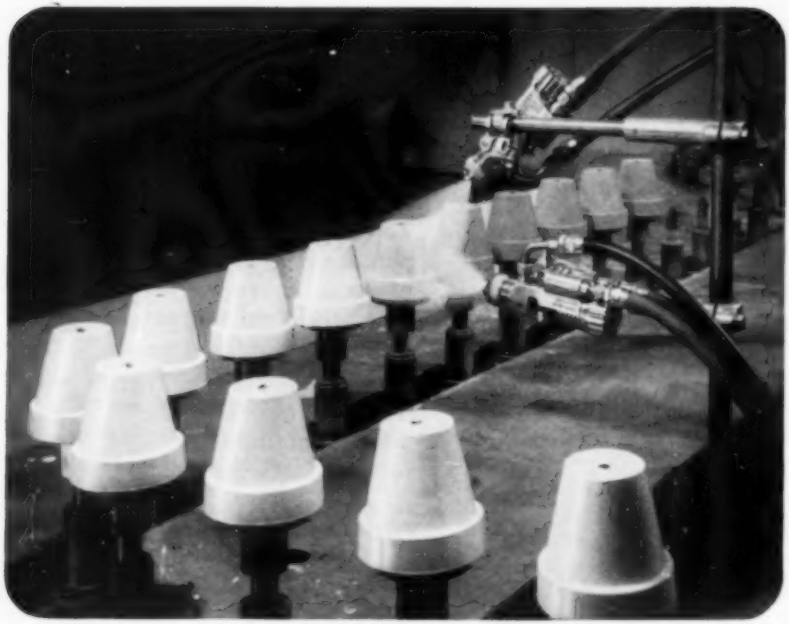
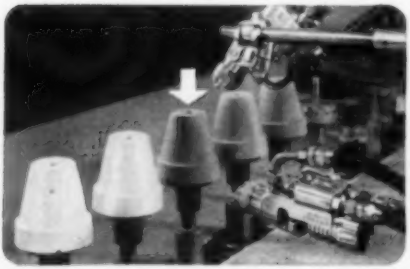
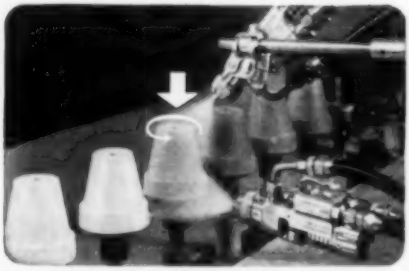


1 DeVilbiss automatic applies a flawless, uniform finish to flower pots at the rate of 3600 an hour. Spray cycle is synchronized with conveyor travel.



2 With spindles six inches apart, chain-on-edge conveyor moves pots into position.



3 At precise instant, two guns spray with overlapping patterns; pot revolves three times.

reject problems . . .

once and for all!

Just load your product on a high-speed DeVilbiss spray machine, and reject problems are gone forever! Split-second timing, accurate gun positioning, and synchronized conveyor speeds prevent streaks, sags, and wasteful overspray. You actually *save* materials, as you produce consistently better finishes in a fraction of the time consumed by manual methods.

Test run shows how you save

DeVilbiss offers automatic spray machines for painting products of practically any size or shape, and for use with most conveyor systems. To have us run a test on your product and report savings *before you invest a cent*—send us full data about your product, coating applied, number of coats, and production rate desired.

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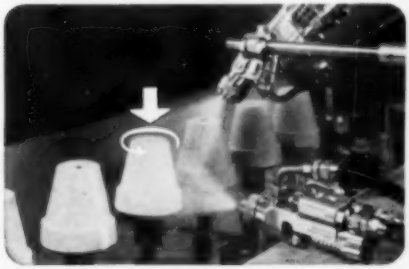
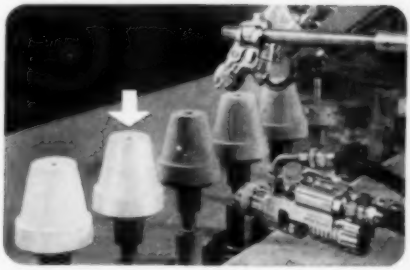


4 Painting takes one-half second. If spindle is empty, machine skips it; guns don't spray.



5 Finished pot moves as next one takes position. Total cycle only lasts one second.

How We Finish

TAPE RECORDERS

BY M. PROSK
Finishing Superintendent
Mercury Metal Finishing Corp.*

THE WOLLENSAK 1500 tape recorder by Revere is a portable instrument. Naturally its finish is subject to more wear than the finish on an instrument that remains stationary on a stand or table. As you will see, the quality of finish on these tape recorders compensates for the additional wear. In the first place, much emphasis is placed on finish adhesion; it is a 2-coat job throughout.

All parts of this tape recorder are fabricated from sheet aluminum—or they are aluminum die castings. When the parts arrive in the finishing room, the smaller ones are placed in wire baskets to be hung on the horizontal bar conveyor of our vapor degreaser. Larger parts are suspended by hooks which hang directly from the cross-bar conveyor. Parts are moved

*2122 S. Prairie Ave., Chicago 16, Ill.

through the vapor zone of the degreaser to remove oil, grease and finger marks.

Next, all parts go through an etching solution followed by a water rinse. We chose a dipping tank system for this rather than a conveyorized phosphating machine because we want certain parts to remain in the solution longer than other parts. Some parts must be given "heavier treatment" than others. By this method we produce surfaces that will inhibit corrosion indefinitely, and at the same time provide an excellent base for the prime coat. After leaving the rinse tank the parts enter a dry-off oven through which they travel for three minutes in a temperature of 300° F. A cooling period of 15 minutes follows.

Spraying white enamel on part of tape recorder through a precision metal mask. The mask is heavy, so there is no need for compressed air to hold it firmly in place.

Some parts of the recorder are so small that it would not be economical to spray them individually. These parts are placed on wire mesh trays to be prime coated in

Battery of spray booths where recorder and projector parts are primed and given top coat. At each booth there are precision metal masks and a mask washer, shown on table at left.

multiple. Larger parts are sprayed separately with a flat gray primer.

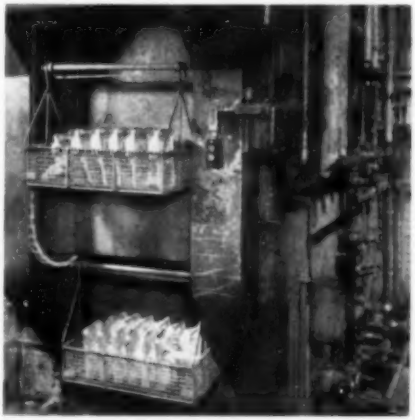
Following application of the primer, all parts are loaded on conveyor carriers to go through the indirect fired gas convection oven located on the roof of the building. The prime coat is baked for 30 minutes at 300° F. As the trays containing the small parts return to floor level they are removed from the carriers and each part is turned over on the tray. Then these same parts go back to the spray booth for priming of the uncoated side. These trays are again placed on the carriers to go through the oven for the same length of time and at the same temperature.

Spray Paint Through Accurate Metal Masks

All exposed parts of the recorder are finished in white enamel except the outside of the bottom. This area receives a coat of silver wrinkle enamel. Certain areas of the parts must not be primed or coated with white enamel. Other areas must be primed only and not receive a top coat. To accomplish this on these particular parts, both primer and white enamel are sprayed through precision metal masks.

It is possible to spray from four to six parts before washing the mask, depending upon the size of the opening in the mask. We have six automatic mask washers located close to the spray booths to facilitate mask washing. The ease with which these masks can be washed actually aids in producing a better quality of work. The operator who uses them reasons this way: "Why worry with a partially clogged mask when it can be so easily cleaned in a few seconds?"

After being coated with white enamel, the parts travel for eight minutes to flash (air dry) before the finish is baked 30 minutes at 300° F. Each conveyor carrier is fitted with two metal canopies or shields, one at each end. The larger parts are hung under these shields at the spray booth to protect them from falling particles until after the finish is baked.



All aluminum die castings and sheet metal parts go through this trichlorethylene vapor degreaser to remove oil, grease and finger marks, before entering the phosphatizing tanks. Many small parts go through in baskets; others, larger in size, are hung directly on conveyor cross bars.

The outside of the bottom of the recorder is spray coated with silver wrinkle enamel. This coating is first allowed to air-dry for 15 minutes after which the fine wrinkle pattern is formed by baking in the oven for 30 minutes at 300° F.

[*Continued to page 55*]

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Latex paints for metal cut fire hazard

You'll solve a lot of plant problems with metal finishes made with latex.

You'll reduce fire hazard and may lower your insurance rates because, in latex paints, water replaces flammable thinners. You'll eliminate disagreeable paint odors. You'll effect safer, more pleasant working conditions.

Don't worry about rust resulting from the water thinner. Latex paints for metal will not cause rusting. A latex paint system will fit easily into your present shop set-up without heavy investment in new equipment. Check your industrial finish supplier now.

THE DOW CHEMICAL COMPANY, Midland, Michigan, Plastics Sales Dept. 1849Z-2.

LATEX T.M.

YOU CAN DEPEND ON DOW

Dow makes paint raw materials

The Dow Chemical Company does not make paint but has been for years a major supplier of many basic raw materials used by the paint industry. In 1946, Dow introduced the first latex for the manufacture of paint and since that time has worked closely with the paint industry in developing new paint products based on a series of Dow latexes.

Water-thinnable latex paints—a growing market

Since the first successful latex paint was developed for application to interior walls, the use of latex in paints of this type has increased tremendously. In step with this rapid growth, The Dow Chemical Company and the paint industry have long conducted research on the application of latex for paints and finishes in the industrial field.

Latex metal finishes—product of intensive research

Because latex paints are water-thinnable, there were many problems to be solved before the excellent properties inherent in Dow latex could be successfully applied in the metal finishing field. But these problems were met and solved. Then followed extensive tests in the laboratory and field. Now the results are in . . . water-thinned latex finishes for metal are a reality.

Latex basic to many metal finish applications

The primary research on latex finishes done by Dow and carried into complete paint formulations by metal finish manufacturers, can now be applied to specific product requirements of the industrial finish user. Since each consumer of industrial finishes will have very specific requirements, it now remains for the paint supplier to provide specific formulations based on latex for each application. Dow suggests that you work closely with your industrial finish supplier in developing finishes to your specifications based on this important new raw material, Dow latex.

THE DOW CHEMICAL COMPANY
Midland, Michigan

[*Continued from page 52*]

After cooling for 30 minutes the wrinkle finish is sprayed with a clear, water-white lacquer.

Inspection of All Parts; Hand Cleaning; Packing

All parts are inspected after the prime coat has been baked and again after the white enamel has been put on and baked. Certain parts (for example, the cover or lid of the recorder) which do not require hand cleaning, are inspected and placed in polyethylene bags to be delivered to the assembly lines. This precaution protects the white finish against dust, dirt and handling marks.

Other parts, after application of the white enamel are delivered to skillful hand cleaners or "spot cleaners." Here they are inspected and those small areas on which paint is not desired are carefully and expertly hand cleaned with solvent. Then all of these parts are again inspected before they go to the assembly lines.

D. S. Weinstein Elected Pres. of Devoe & Raynolds

The election of Doran S. Weinstein as President of Devoe & Raynolds Co., Inc., was announced last November.

Devoe, which operates as a division of Merritt-Chapman & Scott Corp., its parent company, is a large producer of paints, industrial finishes and related products, including resins, chemicals, and plastic materials for coating manufacturers and other industries. Founded in 1754, the company now operates nine plants throughout the United States, and plans the building of another in the Southwest in the near future.

Mr. Weinstein has served as Executive Vice President and General Manager of Devoe since 1954 and as a Director since 1955. He succeeds Carl McFarlin, Sr.

The Slow Sprayer

We almost fired Nick for being slow as a sprayer but we found that his work was of top quality—always the same—and next to highest in volume.

By KEN MacKENZIE

I THINK THE MAIN qualities that influenced us to hire Nick were his quiet air and modest manners—such a contrast to the usual noisy and flamboyant sprayer. I think men in the finishing room get that way from working in an atmosphere of continual noise. Anyhow, Nick had none of it; he seemed to have just a quiet assurance that he could handle the type of work we had to do, so we put him to work spraying.

As I said, he was not the type of man to attract attention; and he did not attract much from me. However, one day some of the top brass was making an inspection of

"I'll admit he isn't flashy enough to be on the Ed Sullivan Show—but the work sheet shows he's doing more work with fewer rejects!"

Spruance

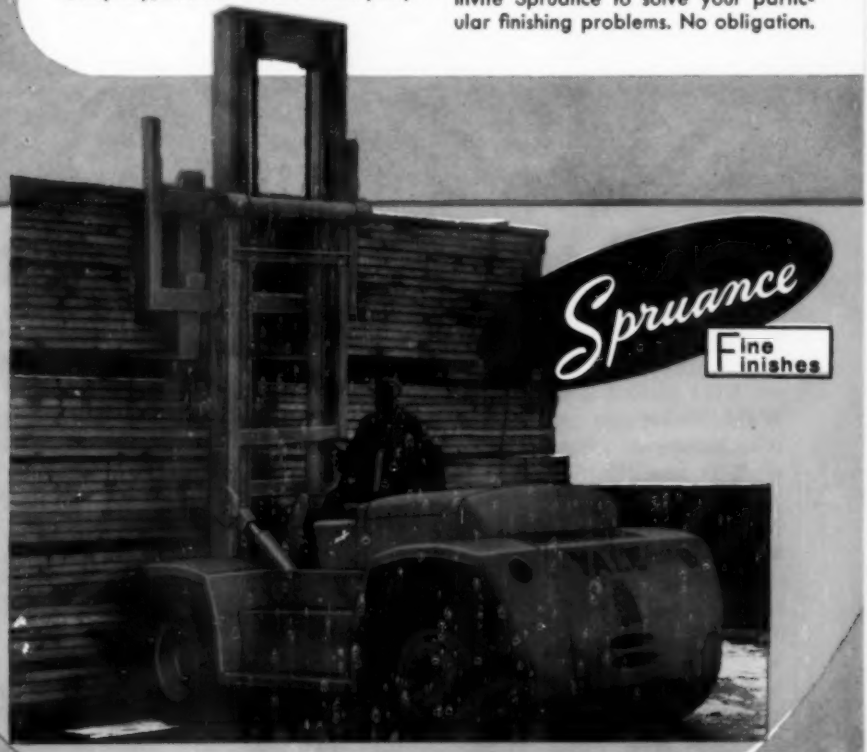
Primers and Enamels Speed Finishing of Hydraulic Lift Trucks at YALE

Spruance has developed special eye-appealing, tough and fast-drying primers and enamels for vehicles and machines subjected to the rigors of weather, corrosion and rough handling. These coatings are exceedingly durable, prolong life, preserve metal surfaces and general appearance.

At the Yale & Towne Manufacturing Company, as shown in the accompanying photograph, vehicles receive a fast-drying primer coat, followed by the finished synthetic enamel coating, in only a half hour's time. In another hour the vehicle is ready for final trim.

Spruance primers and enamels play an important part in beautifying and protecting the products of many nationally-known manufacturers.

Invite Spruance to solve your particular finishing problems. No obligation.



THE GILBERT SPRUANCE COMPANY, PHILA. 34, PA. WINSTON-SALEM, N.C.

the plant, following which I was summoned into the manager's office. After a few complimentary remarks about the neatness of the finishing department, he remarked, "Say Ken, isn't that fellow on the No. 4 booth terribly slow?" That fellow was Nick. I promised to check up on him. For the next couple of days I made a practice of stopping near the booths and watching Nick work.

Compared to Flashy Sprayers Nick Seemed to be Slow

Believe me, he was the slowest sprayer I have ever seen. Where the other boys were zooming around and making fancy music with their guns, Nick's every motion had the semblance of a very tired turtle. He carefully placed each piece on the jig, his gun crept carefully across it, and he placed the finished piece on the oven truck with almost painful deliberation. While I was watching this, my foreman, Frank, came alongside. Grinning at me, he asked: "Do you see the same thing that I do?"

"Frank, it certainly looks like we have picked a prize in this lad. We'd better do something about him before he grows roots in front of that booth."

I was inclined to let Nick go at once. However, Frank felt that if we talked to him he might be persuaded to shift into a slightly higher gear. We agreed that we really liked the guy. The upshot was that we called him into the office. After a few formalities and a cigarette, I laid the cards on the table, coming down to the point: "Nick, can't you speed up a bit?"

A Pace That Gives Quality Work, With No Rejects

His reply kind of stopped me. "Sure, Ken, I can go as fast as you want. I have been pacing myself to the work, but if you have any more for me I will be only too glad to handle it." Frank and I took time out to examine the work sheets. To our surprise, we discovered that Nick was second to only one other man in the number of pieces he had produced since he started. We also found something else. He almost never had a reject, while with some of the boys rejects ran as much as 10%.

While Nick and Frank were having another smoke, I went out and examined some of Nick's work. It made me ashamed of myself. It was the most perfect spray work I have ever seen. Every square inch was covered to perfection—no dry spray, no fatty edges, no damages from careless handling—just the skillful handiwork of a real artisan.

Needless to say, apologies were in order and gladly given. Nick went back to booth No. 4. Whenever we had an order where there were no extra parts to allow for spoilage, or a rush order that had to be right the first time, thereafter those jobs were always assigned to Nick. Likewise, whenever perfection was needed, as a unit destined for show or display, we never thought of giving it to anyone but Nick.

Finally, one day I heard of an opening with a fabulous salary for a finishing man, but he had to be an artist. The job was secure and the company was noted for its fine

For some situations, there's only one finish!

...for severe service conditions—Glidden Nu-Pon, the epoxy baking primer!*

Leading home laundry manufacturers use Glidden Nu-Pon primer as part of their overall finishing schedule. They know these superior epoxy baking primers offer positive adhesion to metal, can be dipped or flow-coated; manually or automatically sprayed.

Glidden Nu-Pon primers combine complete protection with thin-film economy, bake-dry to a tough, flexible film that provides maximum resistance to humidity, corrosion, impact and abrasion, furnishes an excellent base for Glidden NUBELITE*, the quality baked-enamel topcoat.

Whether you make appliances, vending machines, office furniture or other fabricated metal products, Glidden experience and technical know-how in industrial coatings can improve the quality of your product and, perhaps, return considerable savings.

*A Glidden Trade-Mark

GLIDDEN

THE GLIDDEN COMPANY

INDUSTRIAL PAINT DIVISION

900 UNION COMMERCE BUILDING · CLEVELAND 14, OHIO

QUALITY Glidden PRODUCTS

Sales Offices and Factories:

San Francisco · Los Angeles · Chicago (Harbor Div.—1855 N. Lockwire Avenue) Minneapolis · St. Louis · New Orleans Cleveland · Atlanta · Reading Canada: Toronto and Montreal

employee relations. I could not do less than get the two of them together. That was 15 years ago and they are still together.

From Nick I learned that while a flashy performer may do excellent work, you should never be misled by an appearance of slowness in some less spectacular workman. The deliberately unhurried motions of a slower man may be the pace of an artist who knows exactly what he wants to do, and has no need to be a show-off.

Expanded Metal Trays In Painting Room

METAL TRAYS made of Wheeling ExM expanded metal are used extensively for painting detail parts of the F-102A supersonic all-weather jet interceptor, built by the Convair Division of General Dynamics Corp. (San Diego, Calif.). Some are used on a continuously moving conveyor line. Others are hand moved.

The 62-tray conveyor carries airplane parts through two automatic paint syray booths and two drying ovens. Parts on hand-moved trays are manually painted in a color spray booth; the trays are then placed in a rack to dry.

Convair's Plant Engineering Department built 200 of the 20 x 36-in. trays, spot welding the expanded metal onto ¾-in. angle iron frames. They weigh 9-lbs. each and are durable, yet easy to handle.

Use of ExM allows excess paint to go through the tray into the spray booth waterfall, thereby permitting parts to be painted evenly without buildup or overspray.

Trays are rotated periodically to permit stripping of built-up paint deposits. With minimum maintenance,

These trays, for supporting small parts, let overspray through, withstand oven heat and can be put through a stripping process to clean them. They are made of expanded metal

Convair states that they can be used indefinitely for painting purposes.—*Wheeling Corrugating Co., Wheeling, West Virginia.*

Oakite Appoints New Men

Oakite Products, Inc., manufacturer of industrial cleaning and metal treating compounds, announces the appointment of two new technical service representatives.

Donald R. Dutton, formerly a district sales manager for a large manufacturing firm, has been assigned to Lansing, Mich.

George D. Findlay, III, for many years sales manager of a sporting goods firm, is the new Oakite representative in Vermont.

Both men have completed an 8-week training program at Oakite's New York laboratories and in the field.

MAR-PROOF LACQUER

SCHAEFER'S Mar-Proof Lacquer is a performance-proven finish that cannot be easily marred or scratched.

It's tough—tougher than the ordinary lacquers; meets the most critical requirements of current production.

Made in either clear gloss rubbing or satin finish, it produces a splendid transparent coating of full depth on maple, walnut, gum, mahogany and other cabnet woods.

Economical; gives plenty of coverage and dries quickly. Our Mar-Proof Lacquer Sealer is recommended with it for a first-coater.

Working samples furnished without obligation. Write for them!

THE SCHAEFER VARNISH COMPANY, INC.
Louisville, Kentucky

Putting The Finish on TV and Hi Fi Cabinets

By Charles S. Hudson
Vice President, Production*

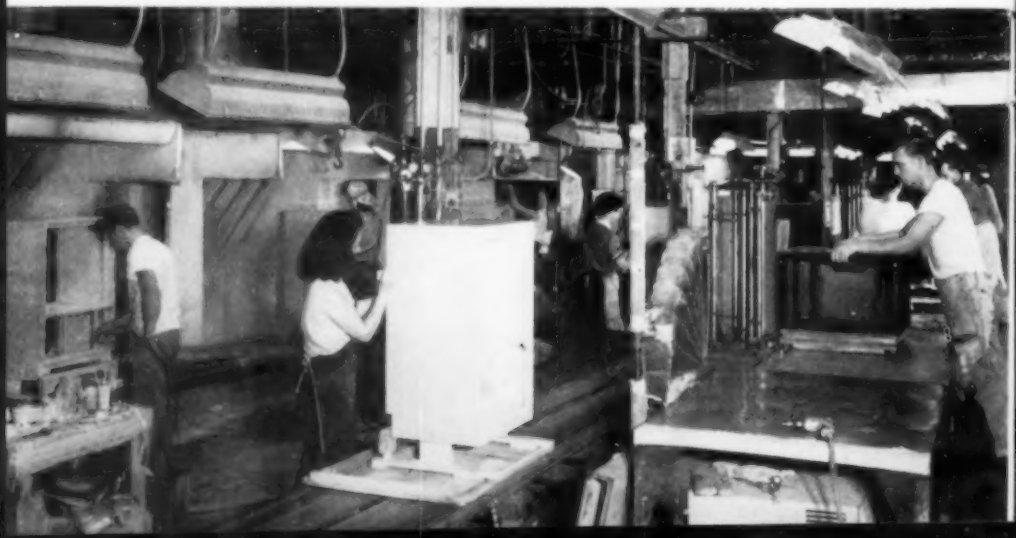
FACILITIES for mass production finishing of a single type and kind of cabinet are fairly easy to set up. Our problem is more complex. We have to produce what the customer wants—and it must meet his specifications and quality standards. We manufacture TV and Hi Fi cabinets in both console and consolette models, so there is a difference in size of the two cabinets.

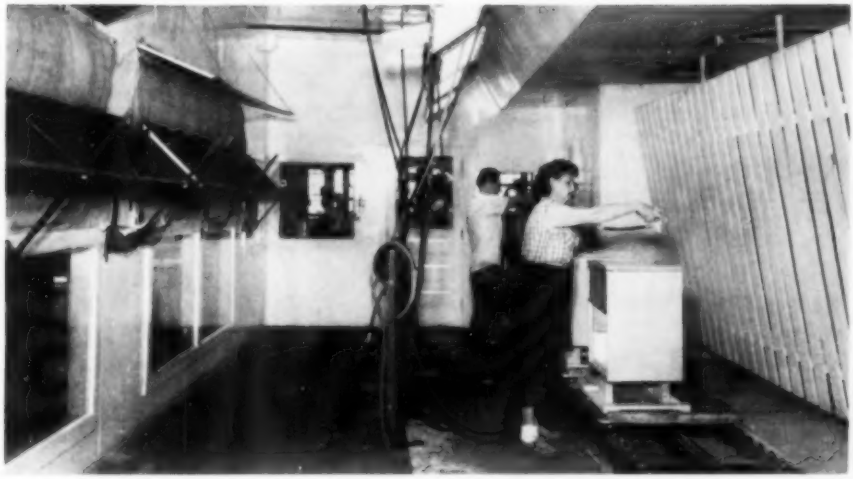
We produce different types of cabinets. Some of them are made of genuine mahogany, oak, walnut or maple. Others are a combination of wood and hardboard cabinet, while still others are made entirely of hardboard. The two last named types of cabinets are imprinted in limed oak, cherry, maple, fruitwood, walnut and mahogany.

With all of this diversification there is only one thing that is constant and that is the high quality of finish applied. All finishing work is performed while cabinets move along on a pallet type conveyor—that is, with the exception of grain transfer on the hardboard, and the rubbing and polishing.

*L. Berman & Co., Inc. Evansville, Ind.

Spray booths at left are where shading stain and sealer are applied. At right, four vertical-roll graining machines are in operation. Clean dry air from an individual air conditioner is blown over the gelatin composition graining roller to keep it in uniform condition at all times. Each machine has an arrangement of this kind.





The top coat lacquer is sprayed on all cabinets in this bright, clean, pressurized spray room. Only filtered air enters the room, and a dust-proof, pressurized enclosed tunnel connects this spray room with the final drying oven. Result: A clean finish.

Stain; Wash Coat; Fill; Pad in; Wipe Off; Lacquer Sealer; Dry

Genuine mahogany all-wood cabinets are given a spray coat of NGR (non-grain-raising) stain outside and inside in the first booth. The cabinets travel for 20 minutes to air dry before they arrive at the second booth where a 5% solids lacquer wash coat is applied. This wash coat air dries for ten minutes before the outside surfaces are ready to sand lightly with No. 8/0 sandpaper.

The cabinets are carefully wiped clean of sander dust before they enter the next booth. Here an oil filler is sprayed on, allowed to flash (air dry) and then it is padded in with portable air driven machines. We do machine padding on the tops and hand padding on the fronts and sides. Wipe-off and clean-up operations and inspection follow before the cabinets enter an oven where they remain for 1½ hours at 135° F. Leaving the oven the cabinets travel for 20 minutes to cool.

A spray coat of 21% solids lacquer sealer is applied; this coat is allowed to flash for six minutes before it is forced-dried for 40 minutes at 135° F.

Sand Sealer; Tack Rag; Shading Stain; Lacquer; Dry

A cooling period of 15 minutes follows force drying. The sealer coat is thoroughly sanded with No. 8/0 sandpaper. Then the surface is tack ragged to remove all sanding dust. A shading stain is applied and in an adjoining booth a

Finishing operations on genuine hardwood & grained hardboard cabinets for TV and Hi Fi Sets.

23% solids lacquer is sprayed on. After a flash period of six minutes the cabinets are force dried for 40 minutes at 135° F. Again the cabinets cool for 15 minutes before they are lightly sanded with No. 8/0 sandpaper. The surfaces are tack ragged and inspected. Then follows burning-in and patching operations if or where they are required.

The cabinets enter a pressurized spray room where a top coat of 23% solids lacquer is applied. This coat is allowed to flash for 30 minutes in a dust proof enclosed tunnel which connects the spray room and the oven. In the oven the top coat is force dried for two hours at 120° F. Leaving the oven the cabinets travel to cool for 45 minutes before they are rubbed.

Cabinet tops are rubbed with portable air driven machines, using No. 400 wet-or-dry sandpaper with rubbing oil and naphtha as a lubricant. Fronts and sides are hand rubbed with No. 4/0 steelwool, using the same lubricant. The surfaces are then cleaned with a water soluble polish. A careful finish inspection is made before the cabinets enter the upfitting department where hardware is applied. Cabinets are then given another 100% final inspection before packing.

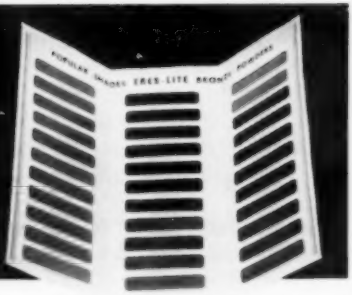
Finish Operations on Wood And Hardboard Cabinets

On the limed oak combination wood and hardboard cabinets, a lacquer-base toner is applied to all exposed wood frame surfaces in the first spray booth. This coat air dries for 20 minutes before the cabinets enter the second booth where a 5% solids lacquer wash coat is sprayed only on the compo-

The filler booth is in background at left. This is the pad-in, wipe-off and clean-up line. An inspector works at the extreme right. Cabinets move along on pallets.

FREE!

NEW COLOR CARD JUST OFF THE PRESS!



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CRESCENT BRONZE POWDER CO.

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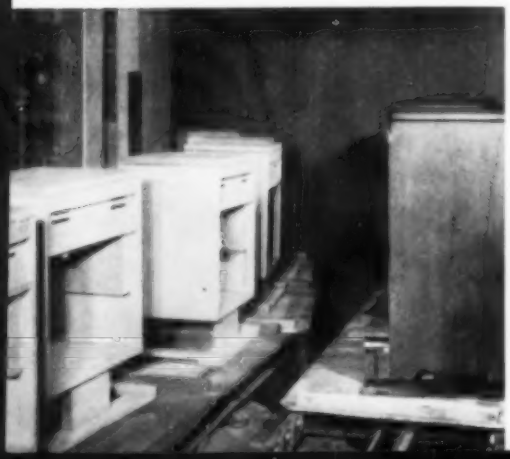
sition board, but not on the wood frame. The wash coat is allowed to air dry for ten minutes before the hardboard top and sides are sanded with No. 8/0 sandpaper. Portable air driven machines are used on the tops and hand sanding on the sides.

The wood frame front is scuff sanded with No. 8/0 sandpaper. After wiping off all of the sanding dust, the tops and sides are slush filled with an oil-base filler and the wood frame front is spray-filled. Pad-in, wipe-off and clean-up operations and inspection follow before the filler is force dried for 1½ hours at 135° F. Leaving this oven the cabinets travel to cool for 20 minutes before a 21% solids lacquer sealer is sprayed only on the wood frame front, and a ground color coat of lacquer base material is sprayed on the top and sides.

The color of the background coat varies with the specie of wood to be simulated by grain transfer.

Filled cabinets entering the drying oven which is located outside the plant building. Loaded pallets move into oven over rollers by gravity, but a powor chain pulls them from the exit end.

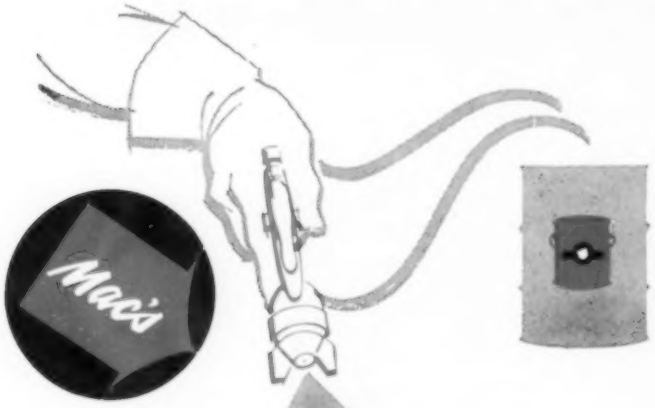


These coats flash for six minutes before they are force-dried for 40 minutes at 135° F. Following a cooling period of 15 minutes the tops and sides are thoroughly sanded with No. 8/0 sandpaper and the wood frame front is scuff sanded with the same grit paper. The entire cabinet is then tack ragged to remove all sanding dust preparatory to the transfer of wood grain on the ground coated hardboard top and sides.

Graining the Cabinets; Clear Lacquer; Drying

We have four vertical roller printers each equipped with oscillating doctor blades and gelatin composition rollers. The ink reservoir is in the base of the machine from which a regulated amount of ink is pumped up to the top of the rollers. Each machine is served by an individual air conditioner and blower system which blows cool dry air onto the gelatin composition roller. This keeps these rollers in excellent condition, regardless of the season of the year or weather conditions. Also, it makes it unnecessary to have two sets of rollers, one for winter and another for summer.

To produce uniform grain transfer it is necessary to control the temperature of the composition roller. If it becomes too hot, it gets more tacky and will pick up more ink. Also, if these rollers are allowed to become too hot they wear more quickly. At the end of the day the printing rollers are washed with solvent and the composition rollers are removed, cleaned and stored vertically over-



5-Gallon Can
at Drum Price

Order a 5-gal. can at drum price and Convince yourself.

Satin Finish Wooling Lacquers

These are ideal lacquers for use where a satin sheen finish with a smooth, silky feel is desired, without requiring a costly rubbing operation.

Their intrinsic and economical values are fully appreciated when used in place of the regular semi-flat lacquers, to produce the much desired satin, velvety finish.

Mac's Satin Finish Wooling Lacquers, if steel wooled only, or if steel wooled with wax using 3/0 or 4/0 steel wool, will produce a very smooth, silky, and scratchless finish that feels more silky than the regular satin finish lacquers. The steel wooling process is inexpensive and easily done.

Mac's Satin Finish Wooling Lacquers are made in different sheens which may be a flat comparable to a 20 sheen or as bright as a 75 sheen lacquer. They may also be used without steel wooling and will produce a fuller and more homogeneous finish than the regular semi-flat lacquers.

Mac's Satin Finish Wooling Lacquers are available in water white light resistant, for use on white or pastel finishes, or in the regular lacquers for the darker shades such as mahogany, walnut, etc. The water white satin finish wooling lacquers are universal lacquers and may be used on both white and medium to dark finishes wherever space for storage is important.

When ordering, advise sheen desired and whether you want water white or regular satin sheen wooling lacquer.

"Eighty-two Years of Service"

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

7430 STATE ROAD **PHILADELPHIA 36, PA.**

night in a cabinet which is maintained at 80° F. with 35% relative humidity.

The oak, cherry, maple, fruitwood, walnut and mahogany grain designs are picked up by the applicator roller by contact from a chrome-plated design roller and imprinted on the ground coated hardboard as the operator holds the traveling cabinet against the applicator or printing roller.

After they have been grained the cabinets are returned to the conveyor and enter a booth where a shading stain is sprayed only on the narrow-framed fronts—to match the color of the graining on sides and tops. The fronts are not grained. In an adjoining spray booth a 21% solids lacquer sealer is applied to the entire cabinet, including the front. Then comes a flash period of six minutes and force drying for 40 minutes at 135° F.

Leaving the oven, cabinets cool for 15 minutes before the sealer is lightly sanded with No. 8/0 sandpaper followed by tack ragging. The cabinets are inspected and patch and burn-in work is done where required. Next they enter the pressurized spray room where a 23% solids top coat lacquer is applied.

The top coat is allowed to flash for 20 minutes as the cabinets travel through an enclosed tunnel before they reach an oven where they are force-dried for two hours at 120° F. Leaving this oven a cooling period of 45 minutes is allowed before the cabinets arrive at final finish inspection. After final finish inspection comes the application of hardware; then 100% final inspection and packing.

The all-hardboard cabinets follow the same procedure as the combination wood and hardboard cabinets, except that operations on the wood frame are omitted and operations on the hardboard are substituted for them.

How to Check Spray Guns For Efficiency

TO CHECK THE efficiency of a spray gun here's a simple test which is advocated by engineers of The DeVilbiss Co.

Open the gun wide by turning the spreader adjustment full open and backing off the fluid screw until the first thread shows.

Adjust the air transformer to 40-lbs. pressure for lacquer and acrylics or 60-lbs. pressure for enamels.

Hold the gun six to eight inches from the test surface; give trigger one full pull, then release.

Check the pattern to be sure that 1) coverage is uniform from top to bottom, 2) that atomization is uniformly fine, and 3) that the pattern is true and free from distortion.

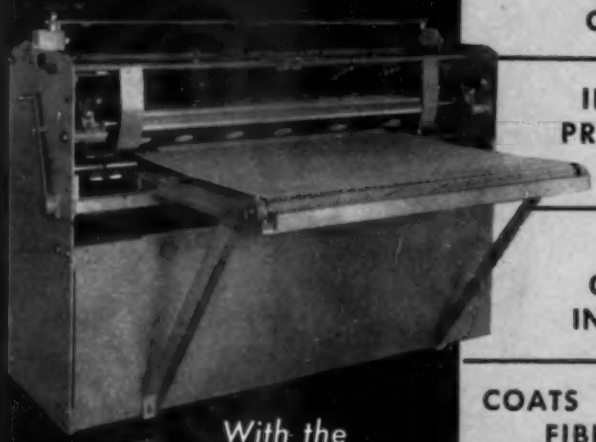
If any of these fail to check, the spray gun is defective, and its continued use may result in a waste of material, time and effort, as well as poorer quality jobs.

L. S. Fulton; The Glidden Co.

LeRoy S. Fulton has been made executive assistant to A. D. Duncan, vice president of The Glidden Co. and general manager of the firm's paint division.

In his new capacity, Mr. Fulton will report directly to Mr. Duncan and will assist him in the overall administration of Glidden's paint division. Mr. Fulton is a veteran of nearly 38 years in the paint industry; he joined Glidden in 1920 as an accountant.

PRODUCE MORE! FASTER!



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GASWAY ROLLACOAT

UP TO 50% LESS PAINT COST

APPLIES MANY TYPES OF COATINGS

INCREASES PRODUCTION RATES

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COATS WOOD, METAL FIBREBOARDS CARDBOARDS, PLASTIC

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Please send me complete information on Gasway Equipment for rollercoating

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GASWAY CORPORATION
6463 No. Ravenswood Ave.
Chicago 26, Illinois

High-gloss enamel holds up down on the farm

TRACTORS are a farmer's pride and joy, but you'd never guess it from the treatment they get. Baked in the sun, bulldogged through swamps—a good tractor finish needs the resistance of a bridge paint, with the looks and gloss of an automobile topcoat.

Famous Du Pont "Dulux" enamel is just such a finish. This hard high-gloss finish gives the sort of service that keeps the farmer happy—makes life easier for finishes foremen, too.

Because of its higher solids content, "Dulux" covers more area with less paint. It's simple to handle and safe to store. Resists pigment separation and viscosity changes. And even on sharp edges, "Dulux" gives a smooth, high build.

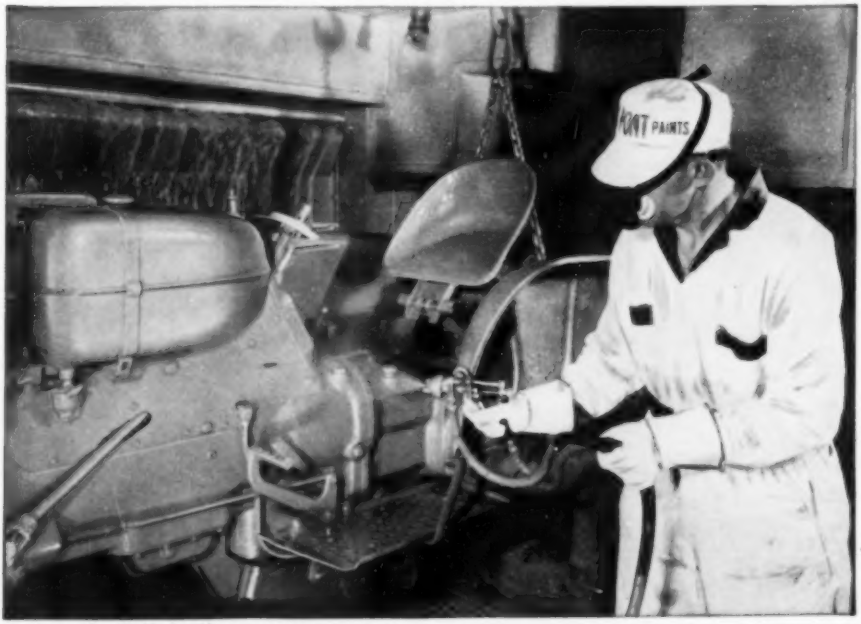
Leading manufacturers in many fields report that "Dulux" applies beautifully with hot spray, cold spray and steam spray, and dries hard under a wide variety of conditions.

Learn how "Dulux" may improve your own finished product, save time and money in the process. Contact your local Du Pont technician, or write direct to E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Delaware.

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*



Conveyorized "Dulux" line with conventional spray equipment delivers fast output for tractor manufacturer. "Dulux" gives smooth paint coverage, even on sharp corners and fender edges. This is a finish any manufacturer could be proud of.

Despite exposure to sun by day and dew by night, high-gloss "Dulux" still resists chalking and lifting, keeps its original good looks. It has the hardness to resist chipping, too. Even the motor block—too hot to touch—has a "Dulux" finish.

Du Pont Industrial Finishes

Chemically engineered to do the job better

EDITORIALS

Ethyl Cellulose In Industrial Finishes

★ Ethyl cellulose, though not as well known as nitrocellulose, is used in a variety of industrial finishes. Like nitrocellulose it dries by the evaporation of solvent. It has good heat resistance, good low temperature flexibility, and is tough. It is tasteless, odorless, and practically colorless. It is compatible with a wide range of resins, plasticizers, oils and waxes. It is soluble in cheap solvents. Often a combination of 70% to 90% of aromatic hydrocarbons (such as xylol), with 30% to 10% of alcohols, is used. Considerable amounts of aliphatic solvents (such as V.M. & P.) will be tolerated, however.

A film of ethyl cellulose is embrittled by sunlight, but stabilizers can be added to minimize this effect. Anti-oxidant stabilizers are added when the ethyl cellulose is to be exposed to heat for considerable periods of time. Ethyl cellulose is a cellulose ether, some of the hydroxyl groups in the cellulose having been replaced by ethoxyl groups. It comes in several types which vary in ethoxyl content. Each type comes in several viscosities.

Ethyl cellulose is used for a variety of coatings on metal, wood, leather, plastics, and rubber. It is used to reduce the drying time of varnishes; is used with tars, pitches and waxes to reduce tackiness and to increase hardness and toughness. Ethyl cellulose has excellent thermo-plasticity and is often used in hot melt coatings, especially in adhesives.

Another use of ethyl cellulose is in fabric coatings. Sometimes ethyl cellulose and nitrocellulose are used together for this purpose. Gel lacquers can be made from ethyl cellulose. A heavy film can be applied with this type of coating. Ethyl cellulose is also used in hot melt stripping compounds, cable coatings, paper lacquers, and in various other specialties.

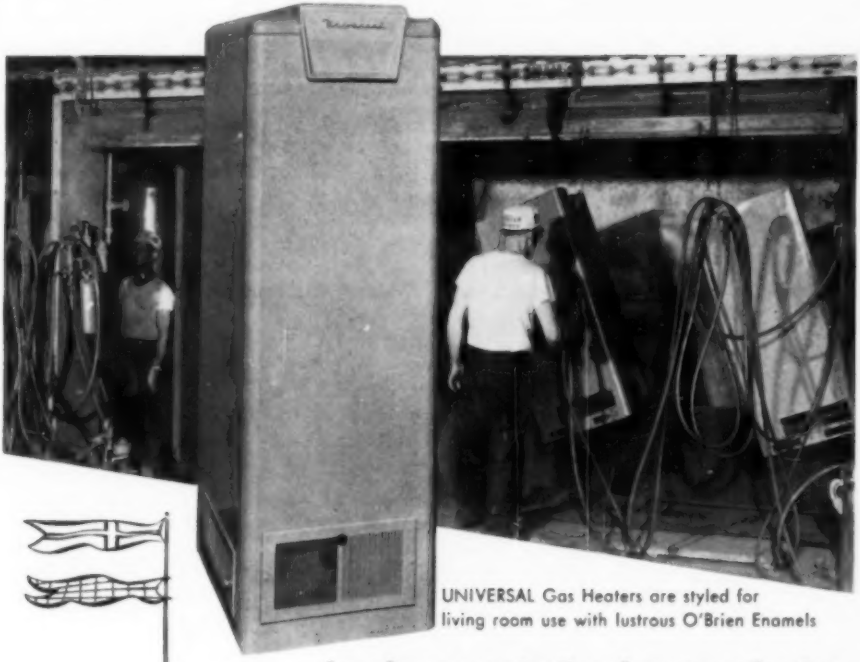
While ethyl cellulose would not be chosen for most industrial finishes it does have a number of good points and fits in well where those good points are needed.—*E. Goldstein.*

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

Are You "Salesman" Or "Order Taker"

★ Many a sales executive, when in the process of addressing a sales meeting or even individual salesmen, has often asked the question, "Are you a salesman or merely an order taker?" It would appear from the manner of speech used that a salesman is an exalted person while an order taker is merely a low form of animal life. It is the writer's belief that most individuals care little which title is theirs, so long as the commissions keep rolling in.

In the present highly competitive industrial finishes field, where experience, skill and technical knowledge



UNIVERSAL Gas Heaters are styled for living room use with lustrous O'Brien Enamels

handsome protection for space heaters

O'BRIEN *Hard-Finish* ENAMELS

Take a cue from Cribben & Sexton Company of Chicago, who have profited from the long-lasting beauty and protection O'Brien finishes give to their Universal Gas Heaters.

The constant heat from these efficient heaters can't alter the beauty of the gleaming O'Brien finishes—finishes so tough there's little danger from scrapes and scratches. Because of the unusual adhesion and hiding of O'Brien baking enamels, customer-pleasing smartness and durability is achieved with only one fast-drying coat.

O'BRIEN

INDUSTRIAL Since 1875 *FINISHES*

The O'Brien Corporation
South Bend 21, Ind. • Baltimore • Oklahoma City
Los Angeles • San Francisco

Investigate the superior protection and long-run economy of O'Brien finishes for your product. Write for details.

count for so much, the sales executive should well ask, "Are you men Technical Representatives or Salesmen?" For the most part, the fast talking, born salesmen of the past are gone. *No salesman of finishes can afford to fail as a technical representative.*

In many cases any individual, seeking to be successful in the industrial finishes sales field, must devote time and study in order to increase his chemical knowledge of paints and paint formulations. The technical representative must be in a position to give expert advice and counsel.

Some men must overcome handicaps in education to achieve the rank and stature of a true technical representative. If the salesman has taken time to study and improve himself in such manner that he is constantly abreast of the many advances and changes in industrial finishes, it matters little whether his title is "salesman" or "order taker." As a qualified technical representative his commissions will keep rolling in.—*N. I. Gaynes.*

Trained Supervisors Are in Demand

Because of the growth of business since World War II, there has been a continuing demand for management people in all organizations. As organizations have expanded, technology has increased so that the supervisor's span of control over numbers of employes has been reduced because of the complexities of all jobs.

Twenty-five years ago a supervisor —on the average—was responsible for 15 people. Ten years ago he was responsible for 12. Today the average is closer to eight people. As the span of control has been limited over the years, obviously the need for supervisors has increased.

More and more companies are engaged in developing competent management people to handle the new jobs that come from expanding industry, increased technology and the normal resignations, retirements and deaths.

A recent survey showed that more than 50% of the companies contacted have an organized program for developing management personnel. In 1953 only 30% of the companies had such programs.—*Management; Kelly-Read & Co., Inc.*

Anti-Rust Additives— A Challenging Field

★ The paint industry is fighting to increase its share of the consumer's dollar. To accomplish this, efforts are being made in a number of directions to decrease costs and to improve quality. One interesting field is that of anti-rust additives. At present, primers intended to aid in corrosion resistance usually contain rust inhibitive pigments, such as red lead or zinc chromate.

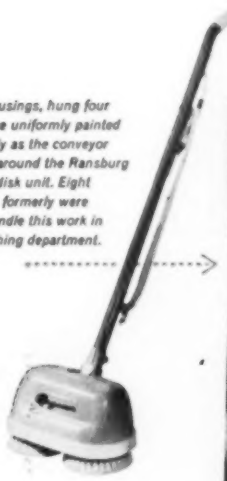
A number of chemical compounds and mixtures have been mentioned in technical literature as aiding in rust prevention when added to a coating in the amount of 3% or less. There is not too much information published on these anti-rust additives. While individual paint companies and raw material manufacturers have both done work with them, much remains to be done.

It is understandable that a raw material manufacturer might not want to put much research into a product used in such small percentages. Some of the results of experimental work are not clear cut. At 1% concentration, the additive may be helpful, while at 3% concentration the coating may have less rust resistance than with no additive. In another formula, using a different ve-

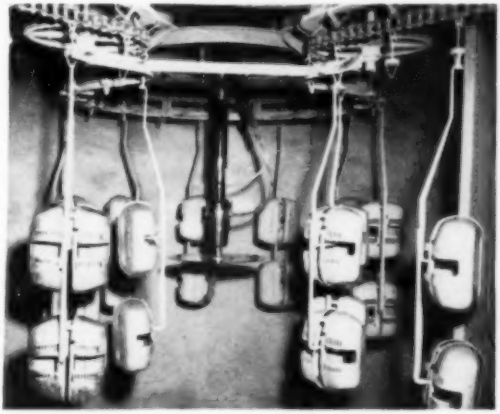
Regina Reports 50% Paint Saving with RANSBURG NO. 2 PROCESS

Electrostatic Spray Painting

That's because Ransburg No. 2 Process puts the paint on the product instead of up the stack



Aluminum housings, hung four to a fixture, are uniformly painted electrostatically as the conveyor makes a loop around the Ransburg reciprocating disk unit. Eight hand sprayers formerly were required to handle this work in Regina's finishing department.



The Regina Corporation, Rahway, N. J., replaced hand spray with Ransburg No. 2 Process to paint their twin-brush Floor Polisher and Scrubber, and their Electrikbroom.

Now, a single reciprocating disk unit automatically handles the work which formerly required eight hand sprayers. Even with increased production, Regina is using 50% less paint. Quality of the work is improved with maximum uniformity on all parts.

NO REASON WHY YOU CAN'T DO IT, TOO! Want to know what Ransburg No. 2 Process will do for you in your finishing department? If your present production justifies conveyorized painting, let us prove the many cost-saving benefits which can be yours. Write for our No. 2 Process brochure which pictures many on-the-line examples of electro-coating on a wide variety of products, and describes our free survey service.

Ransburg ELECTRO-COATING CORP.
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RANSBURG

hicle, there may be no beneficial results at any concentration.

For an additive to be practical it must not have harmful effects on the coating. It must not diminish the gloss, gloss retention or adhesion. It must not affect the dry time appreciably or increase the blistering. It should not be too expensive.

In this field, progress does not come quickly. Even though the salt spray cabinet may give useful information, tests under actual service conditions are necessary for more meaningful results. This type of testing takes years. Anti-rust additives may be used alone to give protection at a cheaper price or with rust inhibitive pigments to further increase the protection. The research may go slowly, but with time anti-rust additives will come into wider use.—*E. G.*

Hot Spray Painting Big Transformers

AN improved finish, with faster application and material savings are benefits desired by every manufacturer in the painting or finishing of his products.

The records of many major manufacturers have shown that these benefits are often gained by changing from conventional spray methods to the hot spray process.

Problems in painting transformer tanks and components such as those illustrated in the photograph taken at the General Electric Co.'s Rome, Georgia, plant were the usual ones met with ordinary spraying methods . . . . By thinning the enamel enough to get good atomization, they often had runs or poor build. Using less thinner meant the use of more air pressure, with the accompanying excessive overspray and waste. These problems have been solved by the hot-spray method.

Faster Application and Material Savings

Because heating reduces the viscosity of the finishing material, less thinner and lower air pressure will provide good atomization. This means greatly reduced overspray and greater saving—plus better build. At least twice the mil thickness can be deposited with each pass of the gun with hot-spray as with cold spray, and without runs or sags. This is because most of the solvents are evaporated as the paint is sprayed, leaving a denser film to reach the painted surface.

Hot spray setup for painting transformers.

Gloss Is Improved; Overspray Reduced

Hold-out and gloss are improved because the wet film shrinkage is reduced. Shrinkage with hot spray is less than that of cold spraying. And because less solvent is used, a

[*Continued on page 86*]

How many places can you use push-button touch-up?

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Screen Process Developments

By J. I. Biegeleisen

THIS IS A good time to catch up on the latest news and developments in the process known as screen process printing and decorating. The occasion, the 9th Annual International Convention of the Screen Process Printing Association, which took place in Detroit, Michigan, on October 26, 27 and 28.

Screen process printing, a branch of the graphic arts, has been widely adopted by several industries for applying single and multi-color lettering, trade marks, charts, diagrams and decorative effects on manufactured parts and products.

This simple process works equally well on any fairly smooth material, regardless of its composition, size, shape, thickness or all-over surface. It is equally adaptable to a tremendous range of "printing" media: ink, opaque and transparent paints, lacquers, enamels, etching compounds, fluorescent colors, rich metallic paints, varnish, glue and sizes.

Letters, Figures, Trade Marks, Emblems, Designs in Color

Its elemental operating principle being founded on a silk stencil stretched on a frame which is hinged to a base, it simply means that the openings of the stencil will admit whatever it is you may want applied, when that particular substance is pushed through the stencil with a squeegee. On this simple principle, the screen process is founded and on this stems its versatility. It is in this manner (with some technical refinements) that colorful designs are printed directly on glassware, containers and the squeeze bottles of the toiletry trade. Coke bottles, milk bottles, cosmetic containers, are some of the common products in this area which are silk screened.

The sign industry, first to adopt this process, used screen process printing to apply decorations and designs on metal, glass, wood and cardboard. The same process is applicable to printing colorful designs on steel drums, flat or fabricated. The process is widely used (some say it has revolutionized the electronic industry by its application) to the printing of electronic circuits, either with metallic electric conducting paint or with etching resists.

The decal industry has been given broader scope by employing the screen process economically even for short runs. Fabrication of toys, furniture, cabinetry, pin ball machines, flocked products—all have found in this process an answer to their special needs for a versatility of effects and for an economy of production.

A review of the highlights of the 1957 Annual Convention will help to appraise those in the industrial

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finishing field who are already acquainted with the process with the latest advances in the field. Those not yet initiated in the use of screen process printing, if their curiosity has been awakened by this and previous articles, will get a better insight into the field through the present review.

Former Hand Process is Now Highly Mechanized

The "overview" of the 1957 S.P.P.A. Convention was mechanization. Formerly all screen process printing was done by hand. This required specialized skill, the artist's feel and a decided preoccupation with the process. Today the process has been so mechanized that a press does not only the heavy work but a good part of the thinking. In other words, the presses are made to do a job heretofore requiring hand labor and human judgment. Here is a sampling of some of the automatic screen printing processes available. As you read this, think of which of these might do a job for you.

Automatic Rotary Presses for Printing Flexible Surfaces

The "General" automatic screen printing presses come in two types —the rotary and the flat-bed. In the main the rotary presses are designed for flexible or semi-rigid material such as plastics, thin-gauge metal, thin veneers, decal paper, etc. A number of models are available, depending upon size of printing surfaces, the size range varying from 19x25-in. to 52x76-in. Speed of production is up to 3000 impressions (for the smaller sizes) down to 500 impressions an hour for the largest surfaces. The various models come in either partially automatic styles which call for hand feeding and manual ejection, to completely automatic machines which include feeding, printing, ejection, conveyance to a synchronized drying oven, and stacking the finished work, ready for the next color or for shipping.

In large quantity production, such as in mass-produced decals, the all-automatic screen press is what the industry uses. Features of the General presses include: Hair-line register, sharp printing, split fountain make-ready for printing two or more colors at the same time, uniformity of workmanship and smooth ink distribution. Not only may standard transparent and opaque paints be used, but also varnish, resists, etching and flock compounds, metallic and fluorescent paints—in fact, practically anything that flows.

Automatic "Decorator" Press, Flat Bed Type

The other line of General automatic screen press, the flat-bed type, represents a series of presses, a bit slower in operation but more versatile and perhaps much better suited to the varied needs of the industrial finisher. In fact, the manufacturer of these presses calls them the "Decorator" presses because they are designed primarily for finishers and fabricators of non-advertising products.

These flat-bed presses lay claim to the following features: Printing surfaces up to 29x43-in. area, with speeds of 1500 to 1800 impressions

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an hour. The distinct advantage of the flat-bed type is that it is not confined to the screening of flexible stock. It will print flexible as well as rigid material. It is the press for heavy-gauge metal, plate glass, Masonite hardboard, heavy rigid plastics, etc., and it incorporates the advantages of the rotary press in terms of paints, inks, varnishes and varied other media. The presses do not take up much floor space and even the largest one runs on a 1-hp. motor.

The "Smaco" Power Printer works on the principle of compressed air power. It is a flat-bed "decorator's" type of unit, compact in design and construction, and features controls in operation. The same press can be manually controlled or run semi-automatic or fully automatic. This feature offers an advantage especially for the type of printing that calls for variable speeds; for instance, printing large heavy-gauge metal, difficult to handle, calls for care and individual control which is not necessary for routine printing of small uniform size sheets. The Smaco Power Printer allows the operator to control the handling and speed, depending upon the need of the job on hand. This line of presses is available in printing area sizes from 18x24-in. to 50x80-in.

Rapid Drying Facilities For Fast Press Work

Another feature that represents a development in the field is the number of drying devices now available. Years ago, when all screen printing was done by hand and the output was small, drying

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represented no serious problem. Each print was separately racked into open shelf drying racks and left until the print was dry. With faster production, made possible by power presses, it was necessary to eliminate racking—and this gave birth to drying ovens a number of which were on display in Detroit.

Some manufacturers of presses also produce ovens. Again one of the leaders in the field is General's "Thermo-Jet Dryer." This represents an advanced means of high speed drying in a wide range of screen process printing and decorating. The work travels on a moving conveyor approximately one inch below the heating unit. Large quantities of warm air are blown through a perforated plate at high velocity, creating many tiny air jets which strike the printed sheet and blast away the solvent vapor. The time of drying many inks, resists, coatings and adhesives is reduced to seconds by the accelerated evaporation process. The use of this type of dryer and others of the kind makes possible the continuous operation of a fast printing screen press for quantity production.

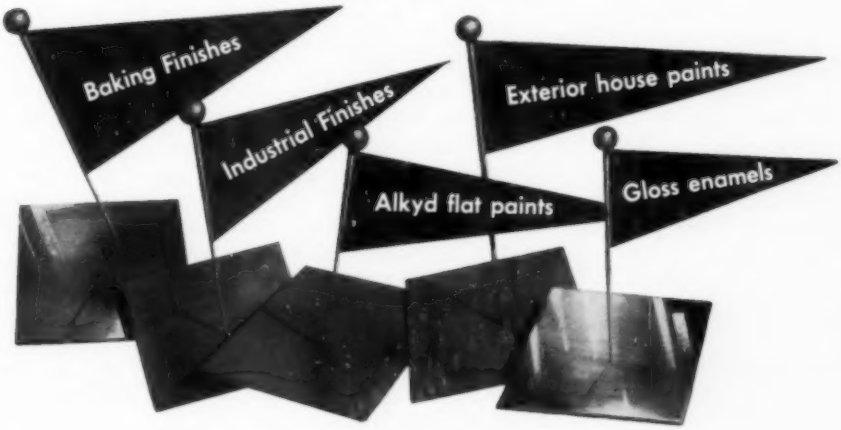
New Stencil Fabrics For Long Hard Service

Other developments, not quite as dramatic but nevertheless significant, are:

Use of a new type of stencil fabric. Heretofore silk was the standard fabric. With the rapid application of screen process to industrial uses requiring large almost endless runs, a more durable fabric was needed. Nylons and stainless steel fabric offer advantages over silk in

see the proof!

Oronite* ISOPHTHALIC improves coatings—at lower resin costs!



Oronite Isophthalic resins prove to be a lower-cost approach for producing superior surface coatings. Whether you are a coatings consumer, supplier or resin producer—ask us to demonstrate the many new qualities of Isophthalic based products. Just contact the Oronite office nearest you to arrange a demonstration based on your particular coating application.

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that they have greater uniformity of mesh, finer mesh holes and far greater durability. For printing industrial products such as electronic devices, glassware, metal sheets, etc., nylon and steel mesh are preferred.

Advances in the photographic stencil field include several presensitized stencil films which require less time in preparation, and produce sharper and cleaner prints. With the new steel mesh and newer photo films, unbelievably good results are achieved on such jobs as printing 8-point type, sharply reproduced with opacity, on flat or round objects.

Similar advances are represented in the field of paint formulation. There are opaque paints and transparent paints, paints that dry with a dull finish and those that dry with a high luster. Special paints are made for ceramics, glassware and metal to be fired; flexible paints for surfaces to be folded, bent, scored, die-cut or embossed. The paint people are busy trying to keep up with the ingenuity of processors who find new uses for screen process work. Are you one of the new users of this process? If not, you may find that it can serve you effectively and economically in a variety of ways.

Hot Spray Painting . . .

[*Continued from page 76*]

faster drying time and a cleaner finish are obtained. Since transformer finishes are mainly for protection, film uniformity is important. Because of the constant viscosity and reduced air pressure, the consistent advantage of a denser, longer-lived film is obtained. Viscosity is the same at any time of the day or season of the year, regardless of temperature in the painting room.

Users find material savings as well as easier quality control with the hot-spray process. Reduced overspray from lower atomizing pressures results in a saving in both the primer and finish coats. Records indicate a usage of nearly one-fourth less enamel, while still producing an equal or greater film build. Because a uniform hot-spray film is actually easier to apply, rejects are reduced. It is estimated that a large transformer tank can be finished in one-third less time with hot-spray, since twice the film is deposited with each pass of the spray gun as with the conventional method.

Maintenance Costs Down

Besides the time and material savings, plus improved quality control, less time is needed for cleaning out the paint booths because of the reduced overspray. Spray application at lower air pressures reduces air volume requirements, thus compressor load and maintenance are proportionately cut down . . . .

Story and illustration supplied by The Spee-Flo Co., Houston, Texas.

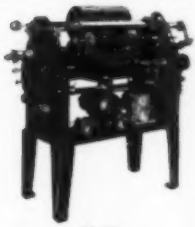
John Baur; Binks Mfg. Co.

Mr. John Baur has been appointed Director of Engineering & Research for the Binks Mfg. Co., Chicago, Ill. Mr. Baur has been with Binks since 1941.

The Directorship is a newly established position at the Binks Co. It was created to aid in coordinating the work of the company's various research and engineering divisions.

DH-128

V-27



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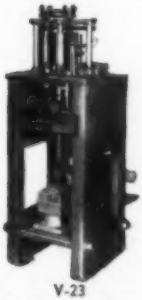

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There is a Hamant model that will do your particular job faster, better and more beautifully at less cost whether you are graining fabricated parts or assembled units.

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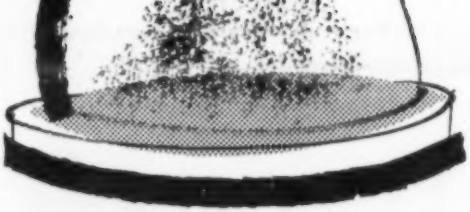

complained about the sanding time required with another product. Now they save 38% in sanding man-hours by spray finishing with Vinoc, and they're well pleased with its appearance. The 38% is their figure."

Let a Lowe Brothers finishing engineer help *you* find ways to reduce costs. He knows finishes *and* methods — and he'll gladly make a "flow-chart" analysis of your finishing system if you'll send the coupon. No obligation, of course.

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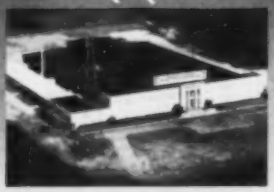

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*Photos show plant growth in the last ten years, but North American's experience has been growing since 1917

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Be Sure All Containers Are Properly Labeled

THE LABELING of shipments of materials from various manufacturing plants is well covered by time-tested rules and regulations. It is a different matter, however, with materials that are used in the plant. Labels may have been damaged in shipment. Receiving area personnel should examine incoming containers and replace labels where needed.

In many instances the original well-labeled container does not always find its way to the actual user. A central receiving and storage area for large quantities of many and varied products is generally the rule. From such a storage area small quantities of materials are withdrawn for use throughout the plant.

To insure safe usage of materials it is imperative that the original well prepared information is made available to the user. To avoid costly, and at times tragic mistakes, all containers should be labeled. Labels serve to identify, warn and instruct. They are used as guides to determine proper storage, flammability and toxicity. They should be accurate, readable and understandable. Brevity is desirable.

The use of common terms to describe an article is important since all persons might not be familiar with trade names or professional terminology. Labels should be placed on the body of the container and not on removable covers. These covers may be lost, discarded or interchanged, with the result

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AT LOWER COST
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FOR EFFICIENT SPRAYING MAKE SURE THE NOZZLE IS RIGHT

that a partially filled container of hazardous material remains unidentified or incorrectly marked.

The responsibility for proper labeling rests with several persons. First and foremost is that of the dispensing agent. No unlabeled container should be permitted to leave the storage area. This does not relieve supervisors of their responsibility for proper indentification of containers used in their sections or areas. Illegible, worn or frayed labels should be replaced at once. This requires constant vigilance to accomplish.

Where it is possible and where containers are always used for the same material, a permanent type of label should be used. These steps do not lessen the responsibility of the actual user who must always watch out for his personal safety. He must at all times know the products with which he is working. Instruction by his supervisor must be accompanied by his own intelligent application of the preventive measures established for his benefit to cope with hazardous conditions.

The personnel charged with the responsibility of establishing a program of accident prevention in their plants also have the responsibility to see that all products received into the plant are properly labeled before they are stored or dispensed. Procedures should be established to pass on to the users such information as is necessary for safe usage. A "follow up" program should also be instituted to insure compliance with these regulations.

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Slash lubrication costs with the most heat-resistant greases known. Silicone lubricants withstand continuous high temperatures and corrosive fumes without oxidizing, decomposing, gumming . . . there's no dripping on newly finished parts.
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unlabeled or poorly labeled containers. Not too long ago, several workers were painfully burned when one of their number attempted to quench a small fire with what he thought was a bucket of water. It happened to be kerosene. Proper labeling could have prevented this accident.

No program will continue to exist long without added attention. To establish rules governing the labeling of products is not the complete answer. True, rules should be established but the success of the program will depend upon how well they are followed by both supervisors and workers.—*John J. Whalen, (Solvay Process, Allied Chemical & Dye Corp.), as published in the Nov. 1957 Safety News Letter of N.S.C.*

Navy Spray Painters Attend Binks Spray Painting School

Twenty-five Navy enlisted men and three civil service employees from the Naval Air Station, Glenview, Ill., received five days of instruction in spray painting recently at the spray painting school operated by Binks Mfg. Co., Chicago manufacturer of spray painting equipment.

The men, responsible for maintenance painting at the Naval Air Station, were tutored in the techniques of spray application as well as proper equipment maintenance, by William R. Brooks, Binks' Director of Customer Research and chief instructor at the school.

Instructor W. R. Brooks tells his class of Navy men about an automatic spray machine.

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Special Reports On Finishing

NUMBER II—Paint Base, Corrosion-Resistant Finishing with Iridite

WHAT IS IRIDITE®?

Briefly, Iridite is the tradename for a specialized line of chromate conversion finishes. They are generally applied by dip, some by brush or spray, at or near room temperature, with automatic equipment or manual finishing facilities. During application, a chemical reaction occurs that produces a thin (.00002" max.) gel-like, complex chromate film of a non-porous nature on the surface of the metal. This film is an integral part of the metal itself, thus cannot flake, chip or peel. No special equipment, exhaust systems or specially trained personnel are required.

Chromate conversion coatings are well known and accepted throughout industry as an economical means of providing corrosion protection, a good paint base and decorative finishes for non-ferrous metals. However, continued developments have been so rapid and widespread that many manufacturers may not be completely aware of the breadth of application of this type of finish. Hence, this digest of current information; to bring you up to date on the many ways in which you can obtain proper surface preparation for painting and increase product durability with a single multi-purpose chemical pretreatment. Report I on decorative, corrosion-resistant finishes and Report III on chemically polished, corrosion-resistant finishes are available on request.

First, it is an accepted fact that metal surfaces should be prepared before painting to make possible an efficient paint system. Naturally, this preparation should provide for good initial paint adhesion. Chemical treatments have proved extremely effective in this respect, particularly those of a neutral or preferably acid nature. Further, to be most efficient, chemical treatments should provide a non-porous barrier to maintain adhesion by sealing the metal from the paint and moisture. They should also provide a self-healing film which prevents lateral corrosion in the event that bare metal is exposed through scratching.

The Iridite chromate conversion coatings meet all these requirements. Iridite is a chemical conversion treatment for surface preparation. It provides initial paint bonding by molecular adhesion. It is acid in nature and produces a film that is gel-like and non-porous in structure. Thus, the Iridite film effectively seals the metal from the paint and from moisture penetration. Because the film contains certain relatively soluble constituents, it will protect areas scratched through to bare metal and prevent lateral corrosion. This is accomplished by a gradual leaching of these constituents into the damaged area.

Further, because of its gel-like, non-crystalline nature, the Iridite film will not affect the appearance or texture of the paint film, nor will it dust or powder to

Non-Ferrous Metals

mar the painted surface. Because the film is non-porous, paint coverage is increased, thus substantial savings in paint costs will be realized. In addition, treated parts may be stored for long periods of time prior to painting without the risk of entrapped moisture causing blistering when painting.

Iridite chromate conversion coatings are widely used with equal ease and success under both baked and air-dried paint systems. While the actual adherence properties of the Iridite film do not increase appreciably with its thickness, corrosion protection does. The protection of the Iridite film is proportionate to its thickness and should be taken into consideration when selecting the Iridite to meet your needs. However, it is sometimes necessary to sacrifice maximum corrosion protection for appearance when a finished part is to be only partially painted. For example, it may be desirable to use a thin, clear, bright Iridite film if the unpainted areas must present a chrome-like appearance. A typical case is that of instrument housings on which the exterior is painted and the inside left unpainted.

On the other hand, if all surfaces of the product are to be painted and maximum corrosion protection is required, the heavier and most protective Iridite films should be used. For example, all surfaces of zinc die cast fruit juicers are finished with a highly protective Iridite film prior to painting to provide maximum resistance to the corrosive action of fruit juices.

Iridite finishes are now available for all commercial forms of the more commonly used non-ferrous metals, including zinc, cadmium, aluminum, magnesium, silver, copper, brass and bronze. In addition to providing an excellent base for paint, the Iridite films also have high decorative value when used as final finishes in themselves.

These films can produce a wide variety of pleasing appearances including clear bright, iridescent yellow, bronze, olive drab and brown. In addition, many films can be modified by bleaching or by dyeing. Among the dye colors available are various shades of red, yellow, green, blue or black.

In planning or designing, you should consider the many other characteristics of Iridite finishes which may enter into the specific problem. In addition to their functions as protective and decorative finishes, and as bases for organic finishes and bonding compounds, Iridites have low electrical resistance. Some can be soldered and welded. The film does not affect the dimensional stability of close tolerance parts.

Iridites are widely approved under both Armed Services and industrial specifications because of performance, low cost and savings of materials and equipment.

You can see then, that with the many factors to be considered, selection of the Iridite best suited to your product requires the services of a specialist. That's why Allied maintains a staff of competent Field Engineers—to help you select the Iridite to make your installation most efficient in improving the quality of your product. You'll find your Allied Field Engineer listed under "Plating Supplies" in your classified telephone book. Or, write direct and tell us your problem. Complete literature and data, as well as sample part processing, is available. Allied Research Products, Inc., 4004-06 East Monument Street, Baltimore 5, Maryland.

Keep Stored Paints Warm in Winter

FREQUENCY of application difficulties with industrial enamels seems to rise with the approach of cold weather. Sometimes the cause of the trouble can be related to the location of paint storage facilities.

When paint or solvent is kept outside during the temperate months, its temperature does not vary appreciably from the inside temperature. However, when it is stored outside, or in an unheated room, during the winter, its temperature will drop and eventually reach equilibrium with the outside conditions.

When this cold paint is brought inside and made ready for use, it still retains its cold. As a result, its viscosity is abnormally high. This, in turn, leads to poor flow and greater difficulty in application. This is especially true if the paint is used in a dip tank or flow coating system where long pieces are being coated.

The usual procedure, when this condition is encountered, is to reduce the paint to the customary warm weather viscosity. Since a larger amount of thinner must be added, to compensate for the apparent high viscosity produced by the frigid conditions, the problem is compounded. Its flow characteristics are still poor and its hiding power is reduced. If the pieces being painted are cold, the situation becomes still worse. For example, if 20% more thinner is necessary for reduction than is customary, then the paint's cov-

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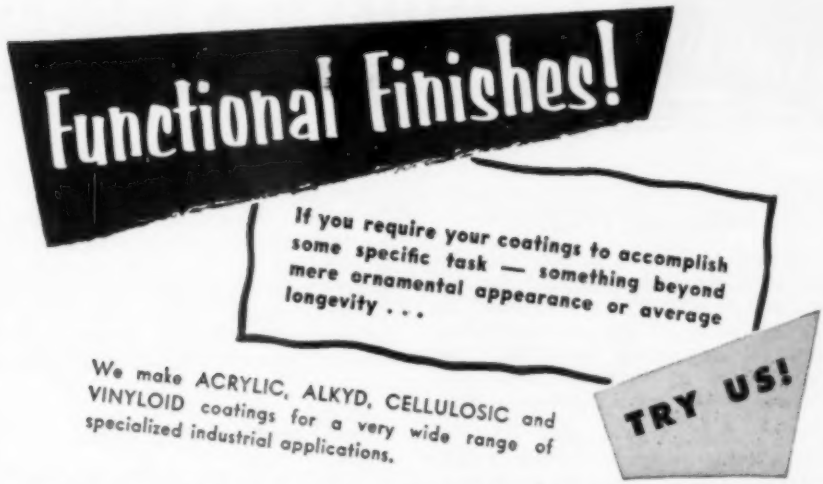
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If you require your coatings to accomplish some specific task — something beyond mere ornamental appearance or average longevity . . .
We make ACRYLIC, ALKYD, CELLULOSIC and VINYLOID coatings for a very wide range of specialized industrial applications.
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erage is correspondingly reduced. This is not an unusual increase to be added to an enamel when its temperature is only 50° F., as compared with an enamel at 75° F.

On the other hand, if the viscosity is deliberately kept at an artificially high value, with the exception of the viscosity dropping as material in the tank reaches equilibrium with the room, an excessively high film thickness will be deposited. This condition is not only wasteful, but it can lead to sagging and a more "tender" film on short bakes.

One manufacturer checked into this situation after running into difficulty during winter time. He had been reducing his material to 30 seconds viscosity as measured in a Zahn No. 2 cup at a normal room temperature of approximately 77° F. During the winter, heat in the building was turned off over the week-end. As a result, the temperature in his dip tank went down to 64° F., and the viscosity of his paint rose to 34½ seconds. Needless to say, application at the latter viscosity gave entirely different results than he had previously obtained.

This problem was overcome by installing a thermostatically controlled heating element. Henceforth, he obtained a more uniform application.

In a spray painting system, the situation is frequently improved by hot spraying. Obviously the easiest solution is to keep inventories at a minimum during cold weather and then store both paint and solvents where they will remain at a reasonable inside temperature.—*K. S.*

Excessive absenteeism may become the supervisor's most serious problem, as demands increase for more and more production.

LETTERS from READERS

Iridescent Finishes

We are interested in obtaining information on iridescent and fluorescent paints that were mentioned in October issue in the Random Comment column, pages 4 and 6. Can you furnish us with the name and address of the manufacturer?—*S. K.*

In a letter we are giving you names and addresses of several manufacturers of these materials.—*Editor.*

Lacquer Blushing Article

Kindly send us a few reprints of the article, "Lacquer Blushing," which appeared in the October 1957 issue, pages 108 and 109.

We would also like your permission to make some copies of this reprint for our own use.—*N. C. & P. Co.*

We have no reprints of this article, but are sending you some tear sheets of it from mutilated copies.

You may make reprints of it, but please include a credit line, for example, "Reprinted from Oct. 1957 issue of *Industrial Finishing Magazine.*"—*Editor.*

We Supply Lacquer Sticks

In October issue, page 124, there was an inquiry from M. Tool Co., with regard to Lacquer Sticks. We wish to advise you that we are manufacturers of lacquer sticks. We are at present producing burning-sticks for both dealers and manufacturers. In addition, we do make and match special colors of sticks whenever called upon to do so. There is a slight charge for this service.—*Mohawk Furniture Finishing Products.*

Electrostatic Flock

Please send us a list of manufacturers of Electrostatic Flocking Equipment.—*J. B. Corp.*

In a letter we are giving you the names and addresses of four or five such concerns.—*Editor.*

Tumbling; Dip-Whirl

Please send us the list of open-end tilting tumbling barrels and dip-whirl centrifugal machines which you sent to "C. P. S." in November's Letters from Readers, page 86.—*A. L. & Co.*

Information supplied.—*Editor.*

Cycle Finishing Story

The illustrated feature article on "Cycle Finishing" by William A. Schelosky of the North Star Furniture Co., as published in Sept. issue, pages 60-62, is the story of our own DeBurgh Conveyor. This will make an excellent data sheet. May we have your permission to reprint it?

A suggestion, a very good one, has been made by our Sales Department

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that our representatives in the field could use articles like this to great advantage as sales tools, particularly when the story is about our own business and our own equipment. And they can speak with more authority if they know in advance when such an article is to be printed in this magazine. . . . *George Koch Sons, Inc.*

Yes, you may reprint this article. Please include a credit line such as, "Reprinted from Sept. 1957 issue of *Industrial Finishing Magazine.*"—*Ed.*

That nose! We'll never fit it!"

Flexible Adhesive for Flock

We would like to get the name and address of "J.R.C., Denver, Colorado," who inquired about flexible adhesives for flock on leather, in October issue, page 120.—*The Rayon Processing Co.*

Information supplied.—*Editor.*

Czechoslovakian Tumbling

Who can tell us something about the Czechoslovakian tumbler coloring process? Some of our readers are interested.—*Editor.*

Staining and Glazing

Would you please forward to us the name and address of "G. B. (Furniture)", who inquires about Walnut Sap Staining? Also, "A. J. W.", in regard to Glazing Stain? These inquiries are in the Questions and Answers of October issue, pages 128 and 129.—*Industrial Finishing Products.*

Information furnished.—*Editor.*

Peelable Protective Coatings

The article, "Finishing Name Plates and Instrument Panels," in October issue has aroused my interest in the protection of metals during machining operations through the application of a peelable latex coating.

We have considerable difficulty in protecting our sheet metal diaphragms; they either scratch or rust during the machining cycle.

Please send any information you may have concerning trade names, vendors and prices of peelable latex coatings.—*W. & T., Inc.*

In a letter we are sending you names and addresses of several manufacturers of peelable or strip-off coatings.—*Editor.*

Electric Drum Warmer

In a recent issue of I.F., which I can't seem to locate at the moment, there was advertised an electric drum warmer for use on material drums

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ENAMELS

Accent Individuality!

Give your metal products a real head start over your competitors' with this economical one-coat enamel. This baking finish provides better looks, gives stubborn protection and hides imperfections. Get better results with it in any type of baking oven.

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We will match any color on orders of 25 gallons or more.

Write us if you have any wrinkle finish problem. We'll be glad to help you — without obligation, of course.

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- **SMALL PATTERN SATIN FINISH**
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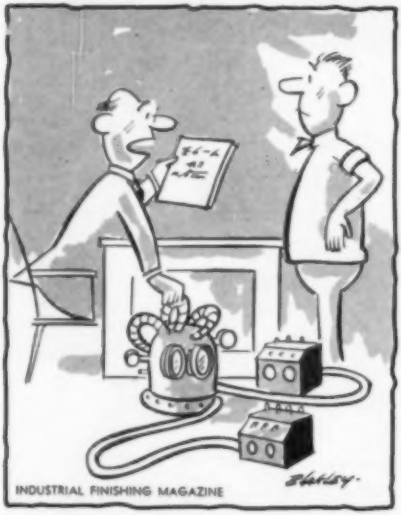
during cold weather. Would you please check on this and request the manufacturer to forward literature and prices to us?—*F. L.*

Perhaps what you have in mind appeared in the Questions and Answers published in June 1957 issue. In a letter we are giving you names and addresses of four such manufacturers.—*Editor.*



Hmmm? I'll have to put on my thinking cap.

Push Button Spray

Please send us a reprint or tear sheet of the article, "Use Push Button Spray to Touch-Up Marred Finish," which appeared in April 1955 issue.

Can you supply the names of three or four companies that manufacture self-spraying touch-up tools?—*L. M.*

We are sending you the reprint and are giving you names and addresses of a few concerns that supply self-spraying touch-up tools.—*Editor.*

Barrel Lift Truck

In August issue of this magazine, we saw something on page 109 pertaining to a barrel lift truck with a lever attached for tilting barrels. We have misplaced this copy and would like to obtain one of the lift trucks. Will you give us the name and address of the supplier?—*A. F. Mfg.*

The item you refer to is a product of Morse Mfg. Co., Inc., 727 Manlius St., East Syracuse, N. Y.—*Editor.*

Non-Toxic Toy Finish

We are interested in contacting a firm that can supply us with a saliva-proof, non-toxic, black, medium-gloss coating to be spray applied to flame-treated polyethylene toys . . . . something that has good adhesion following a fast air dry.—*E. B.*

Who can supply the finish this company wants?—*Editor.*

Glossy Enamel on Dowels

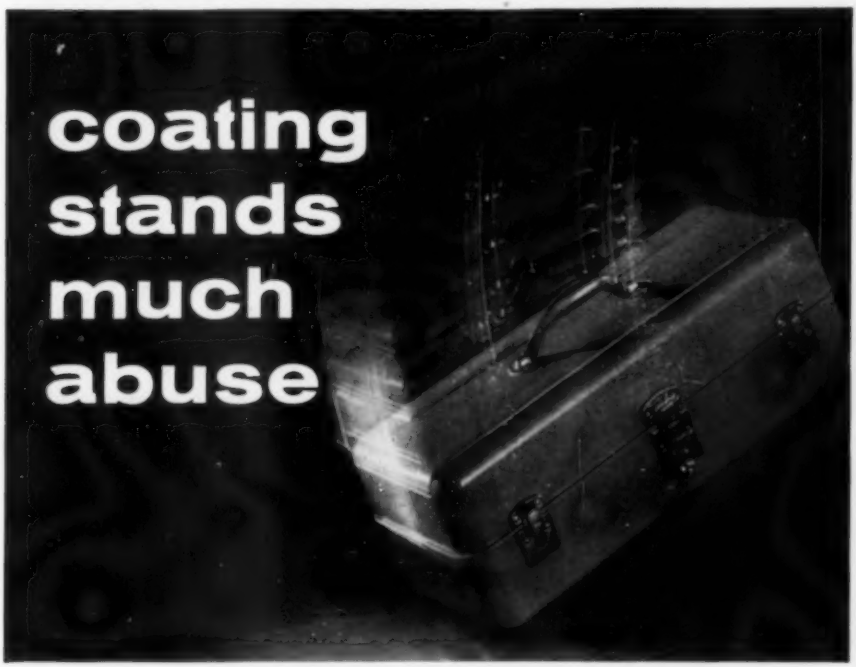
We read with interest in the October issue, page 122, the problem a man has in putting glossy enamel on dowels. This inquiry was signed, "S.F.D.". Would you please give us the name and address of the firm? We will try and interest him in automatic finishing equipment.—*George Koch Sons, Inc.*

Information given.—*Editor.*

Kelite Products' Address

Can you please advise us the name of the manufacturer of Kelite Spray White P H Control? We believe the

when it's UNICHROME *plastisol*



You can drop a coated product, even hit it sharply . . . yet nothing happens to the finish. Subject it to outdoor exposure, moisture, acids, alkalies . . . still no harm. *That's a Unichrome Plastisol Finish.*

Unichrome Plastisols are vinyl coatings with plenty of "give". They take physical abuse without chipping . . . corrosive service without peeling. They have appealing gloss . . . come in a variety of colors . . . apply by all usual production methods. Suggested uses: Any metal product that can be baked at 360°F, such as tool or tackle boxes, tanks, stools, business machines, carts, trays, etc.

Get details from Metal & Thermit, leader in development and production of plastisols.

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company has offices in Los Angeles and Chicago. We understand this material is used to clean white appliances.—*F. P. & S. Co.*

The Kelite products you mention are probably from Kelite Products, Inc., 3401 W. Toughy Ave., Chicago 45, Ill., and 1250 N. Main St., Los Angeles 12, Calif.—*Editor.*

Thin Oil Finish; Walnut

In the September Questions and Answers, on page 96, you made reference to a "Thin Oil Finish for Walnut Furniture" and gave the name and address of one supplier of flat finishing oil.

We plan to manufacture several items which will require a finish of this kind and would appreciate the name and address of the supplier of the flat finishing oil.—*W. Furn. Co.*

In a letter we are giving you names and addresses of two suppliers of flat finishing oil.—*Editor.*

P.S. Several concerns have asked about this item.

Enameling Wood Dowels

In October issue, page 122, we notice a paragraph signed "S. F. D.", where someone is interested in securing information relative to a quick and economical method of enameling wood dowels. If you will advise this individual to get in touch with us, we can give him the benefit of our knowledge and experience, gained over many years, in addition to the type of equipment suitable for economical production.—*H. T. Mfg. Co.*

Information supplied.—*Editor.*

Hand Graining Rollers

Where can we purchase wood grain reproduction rollers for manual operations? The articles are cast and are very intricate in design.—*A. S. Inc.*

In a letter we are submitting names and addresses of three concerns who may be in position to supply these rollers. We would like to hear from concerns who offer these graining rollers.—*Editor.*

Toy Finishing

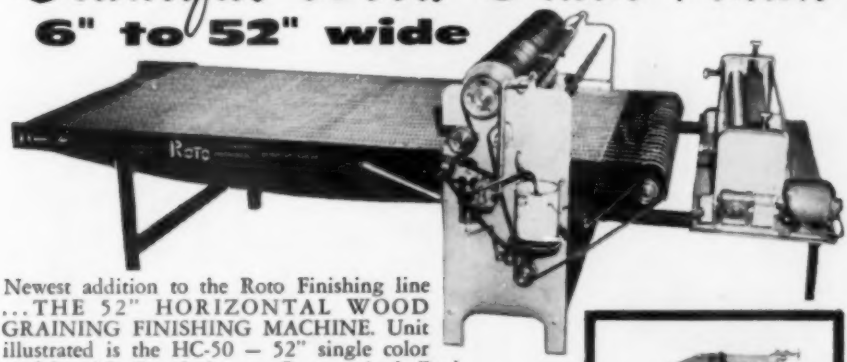
We are manufacturers of wooden toys and have expanded our line of painted products. Since we are relatively new to finishing, we are eager to secure information relative to our product and its decoration.

We are enclosing a list of articles which have appeared in *Industrial Finishing*, and for which we would like to secure reprints.—*F. P. T.*

We are sending you reprints and tear sheets of articles published on this subject.—*Editor.*

Beautiful Wood Grain Finish

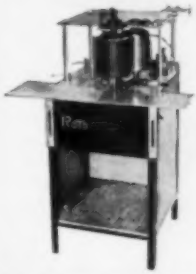
6" to 52" wide



Newest addition to the Roto Finishing line ...THE 52" HORIZONTAL WOOD GRAINING FINISHING MACHINE. Unit illustrated is the HC-50 — 52" single color model, with Revolutionary Conveyorized Feed and Varnish roller coating attachment. Like the well known HV and previous H models, the HC-50 is also available in models that print two or more colors simultaneously.

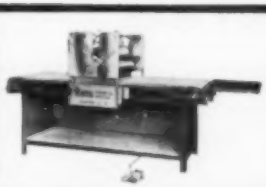
Economical in Price . . . Tops in Production

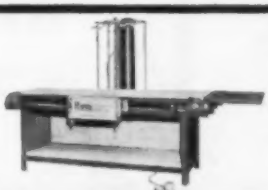
Roto Graining Machines simulate the finest true fidelity reproduction of beautiful wood grains on even the most inexpensive, low cost woods, composition boards, metal or paper. Prints on completely assembled units or pre-fabricated parts . . . grains on flat, round or curved surfaces.



ROTO EB-6

The Roto Vertical Edgebander, EB-6, is ideal for small parts. Use along with any larger graining unit; Available with right or left hand drive, when attached to conveyorized system. The horizontal EB-6 is ideal for small table manufacturers using plastic tops. Features a continuous feed belt that prints high speed graining.





ROTO HV-24 — HV-30 — HV-36
The most versatile graining machine available! Interchangeable, horizontal or vertical operation

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  Patented features of the DeBurgh system can effect saving of 50% in labor.
- **Save Money**
  Investment in the DeBurgh system can be liquidated in 10 to 15 months. After that, your profits are assured.
- **Save Space**
  The exclusive features of the complete DeBurgh system save at least 35% floor space.
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  Labor is kept busy with a minimum of fatigue . . . no pulling, no lifting or shoving.

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MANUFACTURERS OF PROTECTIVE AND DECORATIVE FINISHES

QUESTIONS and ANSWERS

Sap in Pine Turns Finish Yellow

We are using Pondorosa Pine for certain parts in our line of manufacture, and we are having considerable trouble due to the sap turning our light finishes yellow.

We have tried a glue size with some success, but it has not eliminated the trouble 100%. We have tried a size of Paisley Wood Glue No. 2111, and also Glue Life Formula No. 1, without success. Over this size we are using a light grey ground coat (lacquer) which is then printed, sealed, sanded and given a finishing coat of water white lacquer.

Can you recommend a process that will eliminate our trouble 100%, or is there a product on the market for this purpose?—*G. Furn. Co.*

The glue sizes you have tried have been unsuccessful, probably because the sap has a strong solvent action and can find its way through the glue size and the lacquer ground coats. This could be similar to the bleeding of other natural oils from wood, such as cedar oil, which has been very difficult to prevent. Conventional lacquers and synthetics will not resist the action of these natural oils; they will be softened and discolored in the course of time.

The most likely solution to this problem would be to use a catalyzed epoxy type material or an acid catalyzed phenolic or urea formaldehyde alkyd type mixture. A heat cured or heat plus catalyst cured material would provide the maximum in solvent resistance and should do a reasonably good job on this problem.

I believe there is available a catalyst cured phenolic type known sealer which has been designed for use over pine knots in the exterior house paint field. This phenolic has been reported to do a much better sealing job than shellac. If shellac has not already been tried for this problem with Ponderosa Pine, it should be investigated because it would provide a simple fast solution to the problem.—*G. A. Lenaeus, V. P., Research and Production, Southern Varnish Corp.*

Staining Yardsticks

Please give us your suggestion on staining wooden yardsticks yellow, on a fast economical basis.—*T. S. I.*

First, I suggest that you use an NGR stain to avoid any possibility of raising the grain of the soft wood which is generally used for making yardsticks. I would apply the yellow stain by roller coater. I believe enough stain would be applied to the ends of the stick when it enters and leaves the roller coater. As for the edges, you could mount two brushes, one on each side, to contact the edges of the sticks as they go through the machine.

It will be necessary to have a very small trickle of stain drop on the bristles of each brush—just enough to coat those narrow edges. Also, it may be advisable to mount these brushes just ahead of the roller coater instead of back of the rollers; then,

if there should be any excess or lap-over on the two faces or face and back of the sticks, the excess, or at least the color, would be normalized after the sticks have passed through the rollers.

Incidentally the roller coater should be a two-side coating machine. If you wish to go into volume production you could install a series of piano wire belts at the outfeed end of the roller coater. The distance between the wires would have to be not greater than ¼-in. to prevent the sticks from falling through. Then mount a small bank of infrared heating units above and below this wire belt to force dry the stain. The heaters could be in an enclosure with some exhausts (ventilation) to remove any fumes and to aid in drying. But this would apply only for large volume production.

I do not believe that dipping or tumbling the sticks would be successful. In dipping, it would require too much handling; if the sticks were dipped in wire mesh baskets, I believe they would have a tendency to stick together flatwise, in some cases, and therefore would not be coated where the two surfaces contact each other. There is a possibility that they might be tumbled, but I question whether flat sticks 3-ft. long could be satisfactorily coated by tumbling.

Another method is what is generally referred to as "squeegee coating" or finishing, wherein a continuous stream of yardsticks (one following the other) are forced through a container or small reservoir of paint or stain and then through adjustable tight fitting rubber blades or squeegees which scrape off the surplus material and leave only a uniformily thin coating on the wooden yardstick. Many long slender articles (for example, pencils, broomsticks, dowels, arrow shafts) are coated in this way. Special machinery has been developed for doing "squeegee finishing."—*C.C.*

That Thin Oil Finish

Mr. P. C. Bardin: In the Questions & Answers section of September issue, page 96, I was interested in your comment on "Thin Oil Finish for Walnut Furniture." I would like to get the name and address of the supplier of flat finishing oil.

How does this type of finish compare with an ordinary linseed oil finish for durability?—*W. S.*

There are two sources of supply that we know of for the oil used in finishing walnut. One is Schaefer Varnish Co., and the other is Industrial Finishing Products, Inc. (addresses on request).

As to the durability of this oil finish, it would be practically the same as an ordinary linseed oil finish. While we do not have exact formulation data on this oil, we understand that it is probably a combination of Chinawood oil (tung) and linseed oil. Heating the oil before application will make the coating dry faster and probably cause better penetration.

As you probably know, no oil finish is as impervious to moisture as a sealed finish such as lacquer or clear synthetic, and certainly not as durable as, for instance, a urea formaldehyde conversion varnish that is cured at 125° to 135° F., with 32% to 35% relative humidity in the oven where wood products are involved.—*P. C. Bardin.*

Silicone Wax Fish Eye Trouble and Remedies

With all due respect to F.D.C.'s article (published some time back in this magazine), saying fish eye drops were the answer to his particular problem on combating a silicone polished finish, I'm sure he won't mind my giving some additional facts in

this regard, especially since we have spent a lot of time and study on this problem during the past two or three years.

The older furniture that comes into shops for refinishing, where an untold number of applications of silicone polish have been used, doesn't always finish well with just a simple addition of "Fish Eye Drops" added to the lacquer. The cratering effect still persists, and the Silicone Barrier Sealer (mentioned by General Electric Co. and Hercules Powder Co. in their bulletins) is necessary to eliminate the fish eyes or craters in the lacquer that is sprayed on. It has been indicated that certain lacquers have poor adhesion with the addition of fish eye drops (diluted silicone fluid); and the result was that within a few months' time the finish flaked or peeled.

To sum up, F.D.C.'s method may be okay for his particular operation, but it is not safe when silicone polish has been applied several times or has worked into the wood on bare spots where the finish has worn off. Our experience in dealing with refinishing shops all over the country substantiates the above information.—*Star Chemical Co., Inc., J. J. Vaughn, Technical Director & Sales Manager.*

The components that make up silicone are two—the earthly element, "silicon" and also "oxygen." Silicon is next to oxygen as the most common element in nature; its name is derived from "silex," of which flint is its main source. Being somewhat oily and abrasive in its characteristic, silicone in polish leaves a tough or shiny film on a surface. Chemically, silicone is quite stable and for that reason it resists becoming part of other materials. Too complex to dissolve completely, silicone tends to refuse to remain in solution.

Silicone polish, used repeatedly on any finished wood surface, eventually breaks through the film of finish and forms minute breaks much the same as those which appear on the surface of a finish on fir wood that has not been properly prepared to receive a finish. Once the finish has been broken and the surface is again polished, silicone penetrates the pores to a great depth. Unaware of what is happening, the user of silicone polish may find that the wood surface beneath the damaged finish is not protected, and therefore the surface is subject to injury from liquids which may be spilled on it later.

This difficulty occurred with a blond table which the writer recently refinished. Once the finish had been removed and the surface cleaned, it was sprayed with a coat of lacquer sealer. Almost immediately, the surface looked like the cratered surface of the moon. "Fish eyes" were large and numerous, a symptom which indicated the presence of silicone. Not knowing what type or brand of polish had previously been used, the writer asked the owner of the table. Yes, she had used a certain polish containing silicone.

Refinishing of the table then proceeded in the following manner: The lacquer sealer was removed with lacquer thinner and the entire surface was cleaned with "Waxoff" to remove as much silicone as possible. Because no commercial silicone barrier was at hand at the moment, I sprayed a coat of "2-lb.-cut" shellac over the surface. The shellac served as a barrier coat over which I sprayed a coat of commercial lacquer sealer mixed with a small amount of blond lacquer toner to renew the original blond effect. No "fish eyes" appeared. The surface was then successfully sprayed with gloss lacquer, sanded, rubbed and polished with lemon oil polish.

There are a number of commercial silicone barriers manufactured. Al-

INCREASE PAINT SPRAY BOOTH EFFICIENCY .... AND SAVE TIME, FLOOR SPACE, MONEY!

Photo Courtesy Argo Lamp Co., Philadelphia, Pa.

. . . with R P Paint Arrestors

The Argo Lamp Co. found R P Paint Arrestors more efficient, more economical in arresting paint overspray than the more elaborate and expensive system previously used. Investigate the many advantages of these inexpensive, replaceable pads to increase booth efficiency, reduce floor-space requirements and maintenance costs. Write today.

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Make Your Old BULB-TYPE OVEN More Efficient by Installing driQuik F. R. Assemblies

Replace **IN TWO EASY STEPS**

TEMPERATURE CONTROL, ALSO
With the change-over you can enjoy accurate control; from 0% to 100% of rated capacity. Write for literature giving complete data.

You can free yourself from the expense of replacement of burned-out infra-red bulbs by installing dri-Quik F. R. Assemblies. These units fit into your present oven and enable you to save most of the cost of a new oven. Take advantage of greater efficiency of driQuik ceramic-type generators.

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though shellac was used successfully in the aforementioned case, a commercial barrier is excellent. However, I have heard that a barrier coat is susceptible to cold checking because of its high solids content. I don't know.

Cleanliness is important during the entire refinishing operation. Only clean wiping rags should be used, and once used they should be destroyed. The slightest trace of silicone on a wiping cloth will contaminate other surfaces. Clean hands are also essential. It is difficult, if not impossible, to finish in another corner of a finishing area while refinishing a silicone-infested surface. Even the air becomes contaminated. . . . *George A. Soderberg, author of "Finishing Materials and Methods."*

Mahogany Desks To Be Refinished

The desks in our Main Reading Room—some 260 of them, plus a large circular central desk—are made of Honduras mahogany. This furniture has been in use for 60 years and the tops, especially, show the effects of this long wear.

We have been exploring methods for refinishing the surfaces. Although the synthetic surfaces, such as Formica, at first appeared attractive, we are at the point of concluding that the difficulties of application are so great that a continuance of natural wood offers the best prospect of a completely satisfactory surface. Refinishing will require the removal of the equipment from the Reading Room, sanding, filling in depressions, lacquering, etc.

Because this mahogany is not the hardest of cabinet woods, it can be scarred and grooved easily by idle penciling. It is, in consequence, desirable to secure the hardest possible finish. What would your experience suggest that we specify for such a finish?—*The Library of Congress, Washington 25, D. C.*

To refinish the desks, all of the old finish will have to be removed and the surfaces must be sanded smooth to remove mars and pencil depressions. After cleaning off all traces of sanding dust from the smooth clean surfaces, apply a coat of stain. When dry, apply a wash coat made of three parts of thinner to one part of clear lacquer. When dry, sand with No. 8/0 sandpaper.

Next apply filler, pad in and clean up. This filler treatment should dry overnight. Next, apply three coats of clear gloss lacquer. A drying period of two hours should follow the first coat and overnight drying should follow the second coat. Then a drying period of at least 48 hours should be allowed before the tops are rubbed.

Ordinarily a sealer coat is applied just before the first coat of lacquer is sprayed; this sealer is allowed to dry and the surface is sanded and cleaned up. However, I believe you will obtain a harder finish by omitting the sealer.

All of the materials used in this refinishing job should be of high quality.—*P. C. Bardin.*

"Automation in Practice"

The above title is the name of a new book by S. E. Rusinoff, a member of several engineering societies and an industrial engineering consultant. Contents deal chiefly with various types of automatic controls, material handling, production and assemblying, metal working and quality control.

The book is attractively bound in stiff covers and contains 260 pages 5½x8¼-in. More than 200 illustrations are included. There are 14 chapters and an alphabetical index. It is published by the American Technical Society, 848 E. 58th Street, Chicago 37, Illinois. Price, $6.50.

Yellow Spotting

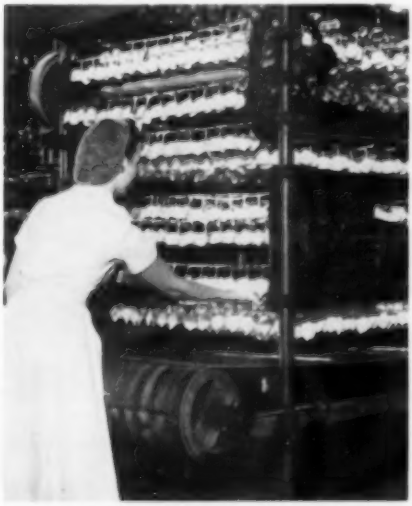
SULPHUR COMPOUNDS used in curing rubber are responsible for the yellow spotting of clear finishes under the rubber feet of telephones, desk lamps and other furniture.

This condition prompted several tests, using both Neoprene and natural cured rubber on surfaces finished with clear lacquer and synthetic varnishes under normal conditions and exposure to sunlight.

All types of rubber tested showed objectionable yellowing on the clear lacquer surfaces, whether exposed to sunlight or not. Yellowing on clear synthetic finishes was not nearly so severe, but still it was apparent.—*C.I.L., Finishing Facts.*

Belt Catches Drip

THE USE OF a wide traveling belt under a moving conveyor to catch the drip-off of excess coating material might be practical and useful in some dip painting or finishing departments. The accompanying picture of such a setup isn't in a finishing room; it's in a bakery.



A wide Koroseal belt catches drippings.

This wide conveyor belt catches the icing drippings from cookies as they are carried along on trolleys during the drying process. The Koroseal 3-ply belt has a non-porous surface and is easily cleaned by wiping with a moist cloth. It resists acids and greases. Wouldn't this be safer, cleaner and more convenient than a stationary drainboard—that is, in some installations? Anyway, it's a suggestion. The belt is a product of B. F. Goodrich Industrial Products Co., Akron, Ohio.—*J. Lee.*

Free Color Movie Tells Story of Push-Button Paint

Self-spraying paint is the subject of a new movie presented by Sprayon Products, Inc., Cleveland, Ohio, custom-loader of pressurized containers. Entitled "The Finishing Touch," the new film is really a short course in push-button painting for the handyman, the "do-it-yourselfer" and the professional alike.

Touching up damaged finishes and complete refinishing jobs are demonstrated step by step on a variety of appliances and equipment, showing both the amateur and the commercial user how to get the most out of "aerosol" paints.

Filmed partly in Sprayon's research laboratories, the movie takes the aerosol dispenser apart and shows what makes it tick.

"The Finishing Touch" is a 16-mm. sound film in full color, running 11 minutes. Interested groups may schedule showings at no cost except transportation. Descriptive folder and information on booking arrangements are available from Sprayon Products, Inc., 2075 E. 65th St., Cleveland, Ohio.

Adelphi Paint & Color Expands Its Ozone Park Plant

Reflecting the steady upward climb of its sales and the greater variety of paint products now being manufactured, the Adelphi Paint & Color Works, Inc., is building an extension of considerable size to its Ozone Park (N. Y.) plant. The firm is celebrating its 56th birthday.

Harding Hot Dipping Process

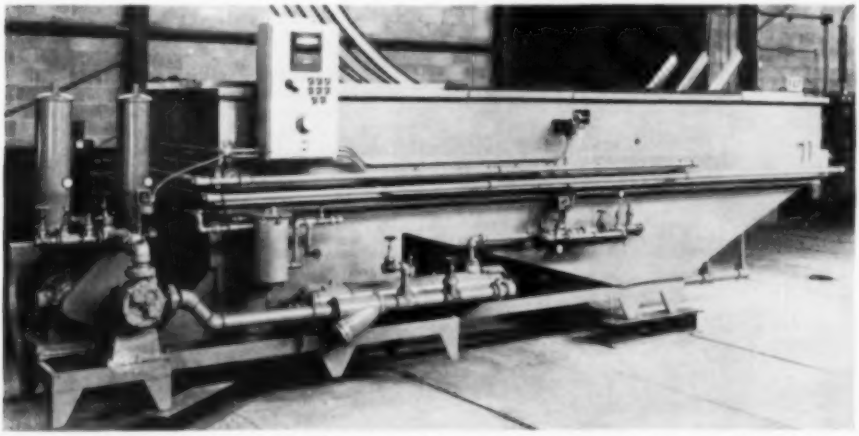
A new paint process—the Harding Hot Dip Paint Process—consists of *pre-heating the article* and then dipping it into paint which has been heated to about 160° F. The liquid contains a chlorinated hydrocarbon solvent (such as trichlorethylene). When the dip coated article is removed from the tank, this solvent is instantly evaporated from the paint by the heat radiating from the article. This results in quick drying, uniform thickness and a drip-free coat.

It is pointed out that in addition to drip-free drying and uniform thickness there are reduced equipment and installation costs; space, time and fire prevention savings; and reduced baking costs.

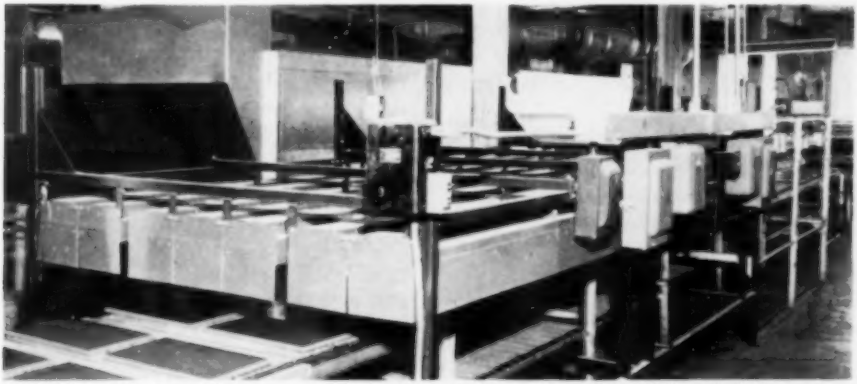
Uniform thicknesses on all coated articles are obtained as a result of the quick drying generated in the process. Conventional dip processes leave a wet film that gravitates to the bottom of the article to cause "wedging." The Harding Process' elimination of wet film permits coating at constant thicknesses over the entire surface of the article. The process is capable of applying coats from ¼ to 2 or more mils in one dip.

Trichlorethylene, the solvent generally used in the Harding Process, is a non-flammable fluid of the same basic family of chemicals commonly used in fire extinguishers. Therefore, the fire hazard encountered in conventional paint processes, does not exist with the Harding Hot Dip Paint Method, and fire fighting equipment and fire walls are not necessary.

Rapid solvent evaporation also eliminates the need to bake for solvent removal. Where a hard film is



Items to be coated are heated, then dipped in paint that has a fast evaporating solvent.



Grained panels travel by conveyor through two 7-ft. sections of an infrared drying setup.

desired through curing, baking costs are substantially reduced. Charts show that the articles coated by the process require appreciably less oven ventilation and less heated air in baking operations.

Previously, chlorinated hydrocarbon solvents such as trichlorethylene were impractical for paint dip operations in that they were difficult to recapture. But the Harding Process efficiently condenses the solvent so that substantially all of it is recaptured and may either be diverted or returned to the solution. For additional information write to the David-Ludwig Co., 14290 Goddard, Detroit 12, Michigan.

For more data, circle 1 on colored card.

Black Brothers Roller Coater

An addition to Black Brothers line of coating equipment is the No. 22-D Roller Coater. It has safety control, precision ground oversize solvent-resistant rolls, larger adjustable opening between rolls, micrometer roll adjustments and a variety of optional extras. Available in 21 sizes from 8-in. to 122-in. Black Brothers Co., Inc., Mendota, Ill.

For more data, circle 17 on colored card.

Conveyorized Infrared Oven Dries Finish on Wood

A driQuik ceramic type electric infra-red oven is used to speed up the drying of ink sealer that is roller coated over printed wood graining at the Memphis Furniture Mfg. Co., Memphis, Tenn. The oven is manufactured by the Dry Clime Lamp Corp., Greensburg, Ind.

These ovens have temperature controls which may be set to give any heat up to 100% of rated power. They and the conveyor are set for one min. and five seconds flash off, 42 seconds of heat and 35 seconds of cooling.

"We do not have loss of heat from stray radiation," says Mr. T. C. Faulk, superintendent of Memphis Furniture Mfg. Co.

Temperature may be changed by the turn of a dial on the temperature control whenever the oven is used for a different operation.

For more data, circle 2 on colored card.

Some time wasters: Waiting for material. Waiting to talk to one's superior. Waiting for a machine that should have been given some maintenance attention—and finally refuses to operate.

New Flowcoating System For Finishing Small Parts

A new method for applying air-drying or baking synthetic finishes or lacquers at low cost to small metal, wood and plastic parts such as lamp parts is being offered to industry by William A. Finkbeiner, Box 36, Cheltenham, Pa., designer and fabricator of special equipment. The method utilizes two units of equipment: a Model 122 Flowcoater with rotating reels designed to hold a variety of small parts by means of spring clips, wires, pegs, or tapered pins; and a Model 814 Rotator to which the reels are transferred after coating.

Use of the same reel to handle the parts through all the stages of the finishing cycle reduces the need for rehandling and reracking during coating, drying, and baking when required. By making use of an appropriate number of reels, this flowcoating process can be operated on a continuous basis.

The Model 122 Flowcoater requires only three gallons of finishing material. This material is pumped from the bottom of the tank through a 25 micron filter and into a horizontal manifold where it cascades from a series of special bronze nozzles onto the reel-mounted parts as the reel is rotated slowly by hand. During this time the flowcoating acts as a washing process to remove all lint, dust and other foreign particles from the parts, to produce a fine finish. Approximately one minute in the closed flowcoater provides a solvent-vapor run-out of excess lacquer which drains back to the reservoir for re-use.

This flowcoater requires only three gallons of finishing material, which is pumped from the bottom of the tank into a horizontal manifold where it cascades from a series of nozzles onto the reel-mounted parts.

After flowcoating, the reel and parts are transferred to the Model 814 Rotator, which accommodates eight reels at a time, each measuring 14-in. in diameter by 55-in. long. Revolving the reels on the Rotator for about 15 minutes allows the coating to set with an even flow-out of any excess finishing material, thus eliminating runs, sags, orange peel, and dry areas.

When baking is required to cure the material, the reels can be transferred to an oven conveyor or placed on a wheeled truck for rolling into a batch-type oven. Throughout all the stages of the finishing process, the parts need be mounted only once.

For more data, circle 3 on colored card.

Pumps and Circulates Paint Directly From Drums

A new bung-type air-operated material handling pump developed by the Binks Mfg. Co., 3116 Carroll Ave., Chicago 12, Ill., cuts material handling costs by pumping paints and coatings directly from original shipping drums to paint stations.

Labelled a "Pogo Pump" because of its pogo stick appearance, the 17½-lb. unit can supply up to four spray guns either directly or through a paint circulating system. The completely sealed, permanently lubricated

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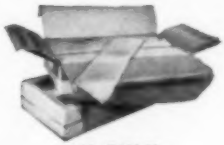
BOND TACK CLOTH

IN ROLLS
Cut off any size piece to use as needed.



IN BULK
Cut and folded. Ready to use.

STAYS SOFT AND TACKY
A SPECK-FREE FINISH EVERYTIME

Now Available in Rolls or Cut Bulk—White or Gold.
In Four Different Types of Cloth

Get your Tack Cloth packed just the way it's easiest for you to use . . . either in 150 yard rolls of 36" wide cloth or in handy cartons . . . 100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up! Choice of Standard, Extra Tacky or Less Tacky as desired.

The Cut Bulk size is 18" x 36" . . . folded to 4½" x 18" or 9" x 18" for ease of handling. ALL BOND TACK CLOTH is **Spontaneous Combustion Proof, Lint-Free** and **Wax Free.** Gives a sparkling speck-free Finish every time. Clean and sanitary. No waste.

TRY THEM and COMPARE RESULTS.
Samples Gladly Sent Upon Request.

Bond. **CHEMICAL PRODUCTS CO.**
"The Tacky Wiper Specialists"
2641 N. CLYBOURN AVE. CHICAGO 14, ILLINOIS

Also Individually Packed in Glassine Envelopes—144 to the Carton

A Warranty of Satisfaction in Every Carton

air motor is separate from the pump to prevent fluids from harming any motor parts.

The reciprocating, positive displacement piston Pogos have 2 to 1 ratios and deliver at the rate of one gallon per minute. The pump can be inserted into a standard 2-in. bung or mounted directly onto the rim of an open 55-gallon drum by means of a simple auxiliary clamp.

Where constantly mixed coatings are required, an agitator may be mounted with the pump on a portable pump drum cover.

Designed for long life, with low maintenance, the units are easily dismantled without special tools. The bottom pump section, which consists of cylinder, piston with rings and foot valve, can be dismantled in less than five minutes and reassembled in the same length of time. All metal parts are electro-plated where necessary and high density aluminum castings are used to minimize weight.

For more data, circle 4 on colored card.

Colorless Coating For Metal Surfaces

The development of a coating as colorless as water for protection of bare non-ferrous metals, and which will restore the color and gloss of faded paint or enamel films, is announced by the Finishes & Coatings Division of Magnus Chemical Co.

This coating, which has been field tested on diesel locomotives, airliners, farm implements, signs and stainless steel and aluminum truck trailers for more than three years does not peel or turn yellow as most clear coatings have in the past. It is a synthetic,

high gloss polymeric finish (not a lacquer) yet it dries in five minutes to touch and hard in 30 minutes.

It has been used successfully over such metals as aluminum, magnesium, copper and chrome as an almost invisible protective coating preventing oxidation, pitting, staining and tarnishing of the metal.

For additional information on Magnus Water-White Clear Coating FF-111, write to the Finishes & Coatings Division of the Magnus Chemical Co., Inc., South Ave., Garwood, N. J.

For more data, circle 5 on colored card.

Mushroom Discs and Pads Improve Contour Polishing

For contour grinding or polishing in small radii or difficult contours with portable tools, a new mushroom shaped molded rubber pad and coated abrasive discs have been developed by Behr-Manning Co. of Troy, N. Y., a division of Norton Company.

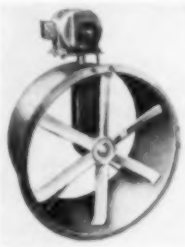
The new discs and pads (in diameters of 5 and 8-in.) were designed specifically for getting into contours where disc pads of conventional type may not perform effectively. With the new pad, it is possible in many cases to do an entire contour in one operation. Also, swirl marks and gouges are virtually eliminated.

Abrasive discs are held by adhesive.

No center nut is required to fasten disc to pad. Instead, discs are held to the pad by a special adhesive packaged in tube applicators.

For more data, circle 6 on colored card.

Safety Exhaust Fans



A new series of belt-driven exhaust fans available in 18, 24, 34 and 42-in. diameters is announced by Binks Mfg. Co. of Chicago, Ill. The fans are designed to give maximum exhaust per horsepower used.

The fans furnish static pressure from ¼ to 1¼-in. Volume of air moved ranges up to 28,375-c.f.m. This performance is based on average motor speed of 1725-r.p.m.

Aluminum fan blades are driven by V-type belts passing through dust-tight housings.

The fans meet fire underwriters specifications. Performance rating is in accordance with the standard test code for centrifugal and axial fans.

For detailed information write the Binks Mfg. Co., 3116 Carroll Ave., Chicago 12, Illinois.

For more data, circle 7 on colored card.

Tilted Tumbling Barrels

A new series of barrel finishing machines by The Baird Machine Co., Stratford, Conn., under the trade name "Poliaction," features complete redesign of pedestals, with new drive and tilting mechanism options to meet production-line requirements.

For more data, circle 8 on colored card.

RONCI SPEEDIP WHIRL ENAMELER

Made in Three Sizes, R-100, R-200 and R-300. Capacities 312-cu.in. to 4400-cu.in.

IDEAL FOR LACQUERING AND ENAMELING PARTS UP TO 20 INCHES IN LENGTH

CUTS COSTS, SAVES UP TO 80% OF MATERIAL

Carries up to hundreds of lbs. per load, and up to 30 loads per hour can be coated with lacquer or enamel in these machines.

All operations are within the machine. Dipping tank is raised, submerging the parts in the basket, and then lowered and the parts whirled, throwing off excess materials. No additional outside tanks required; no cleaning necessary when changing colors; no loss of material.

Prompt Deliveries

Write for further information and submit samples to be coated.

RONCI MACHINE COMPANY

A Division of F. Ronci Co., Inc.

2 ATLANTIC BOULEVARD CENTREDALE 11, R. I.

Rondeau Scratch-Hardness And Adhesion Tester

This new coating tester provides a means of accurately studying the "scratch-hardness versus adhesion" properties of organic protective coating systems. Each stroke of its sliding scratcher-tip yields a film index that is reproducible within close limits and can be handled statistically.

The scratch tester provides a convenient means of studying the cure time of coatings. It is also possible to rate the adhesion of finish coats to their primer, the adhesion of the entire coating system to the substrate, and also the effectiveness of surface cleaning and preparation of the substrate prior to the application of a coating system.

The instrument is equipped with a standard parabolic scratcher-tip. As this tip is drawn at a slight angle to the surface through a total travel range of 100-mm., a simple cantilever spring provides a constantly increasing force. At the starting point (0-mm.) the tip just touches the film with zero force, while at the extreme position (100-mm.) it is fully depressed a distance of 0.1-in. to provide maximum cutting force.

A product of Gardner Laboratory, Inc., P. O. Box 5728, Bethesda 14, Md. **For more data, circle 9 on colored card.**

Flame-Proof Flock Adhesive

Adhesive Products Corp., 1660 Boone Ave., New York 60, N. Y., announces the development of a new flame-resistant adhesive, Flok-Grip, for display and decorative uses.

Flok-Grip can be used to adhere

such materials as: cotton, wood or synthetic fiber flock; glitter and flitter; plastic, glass, wood or styrofoam beads; plastic petals, confetti or other decorative materials to such varied bases as: natural wood branches, leaves, evergreens, artificial flowers, plaster ornaments, or anything else to which surface decor is to be applied.

The greatest merit of Flok-Grip is its flame-resistance, in addition to strong and lasting adhesion. A flame put to an object decorated with the aid of Flok-Grip will be self-extinguishing!

Flok-Grip is easy to use. A water-based product, it can be thinned with water, yet is resistant to water when dry. It may be applied by dip, brush or spray, after which the coated object can be dipped, sprayed or sprinkled with flock or other decor. It is white and translucent, and dries without staining! If desirable, it can be colored to conform with the decoration it is used to adhere. It is rapid-drying for speedy production, is flexible when dry, and will not become brittle or lose its adherence with age.

For more data, circle 10 on colored card.

How to Phosphate Large Parts by Steam Gun Application

Phosphating of parts too large for tank or spray machine application is the subject of a service report published by Oakite Products, Inc., manufacturer of the Oakite CrysCoat Process for the prosphating of metals.

The report tells how Oakite CrysCoat solutions, applied through solution-lifting steam guns, simultaneously clean and coat the metal with a fine phosphate film that protects against under-surface corrosion on painted surfaces. It points out the method's simplicity, involving no motors, pumps, or injectors—merely sufficient steam pressure to lift the solution through the steam gun, and a container for the solution. The report gives solution concentrations and application details.

Copies of service report B-6624 are available from Oakite Products, Inc., 132F Rector St., New York 6, N. Y.

For more data, circle 11 on colored card.

Safer Method of Moving Steel Drums

Without the use of tools, one operator can quickly attach and securely lock this patented Drum-Karrier to any standard steel drum for safe, non-tilting transit via monorail or crane, or for hoisting with a chain block.

Fits all standard steel drums.

Improved type tilt-locks hold the drum in vertical position during travel or hoisting, and permit one man to easily and safely control any tilting of the drum for mixing or dispensing its contents over a receiving tank.

Equipment is easily and quickly re-

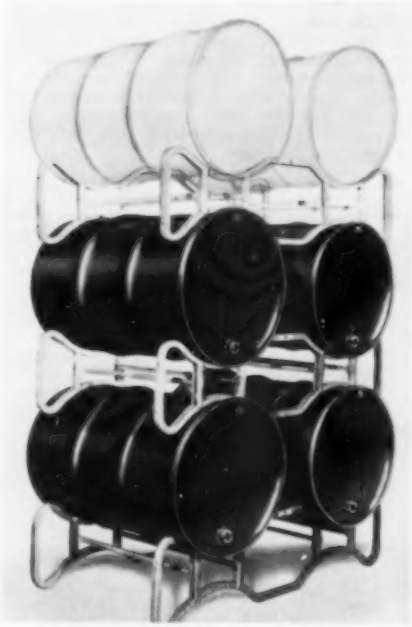
moved from the hoist hook. Welded all-steel construction assures years of trouble-free service. This Drum-Karrier is a recent addition to the Morse line of drum handling and drum rotating equipment made and offered by the Morse Mfg. Co., Inc., 765 West Manlius St., East Syracuse, N. Y.

For more data, circle 12 on colored card.

Barrel Rack Developed By Republic Steel Corp.

The development of a steel rack designed to permit the handling and stacking of loaded or empty barrels and drums with standard fork lift trucks is announced by the Pressed Steel Division of Republic Steel Corp., 6100 Truscon Ave., Cleveland, Ohio.

The new drum rack supports two loaded barrels and makes easy the stacking of pairs of containers to any practical height. Flexibility of handling and storage is provided because individual drums or pairs of drums can be removed without excessive handling of the other drums in the stack.



Portable drum racks can be handled easily.

The new units are so made that a 2-drum lift can be made from either front, back or either side. The same availability applies to a single top drum, for it can be removed from the supporting rack with the tines of the fork lift truck from any side. The units also make it easy to get at bunged drums for draw-off.

For more data, circle 13 on colored card.

Met-L-X Dry Powder to Combat Metal Fires

A piped fire extinguishing system utilizing exclusive Met-L-X dry powder, has been developed by Ansul Chemical Co., Marinette, Wis., to meet urgent demands from liquid metal users for an agent to reduce fire hazards.

Ansul's Met-L-X piped system is designed to give maximum protection against metal fires in areas where use of manual extinguishers is impossible because of radiation hazards or because of the denser, caustic smoke characteristic of liquid-metal fires.

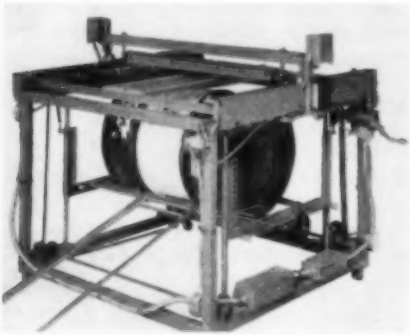
The Met-L-X system extinguishes liquid metal fires by discharging dry powder through nozzles installed over the hazard areas. Piping is so situated as to coat all vertical surfaces and at the same time distribute an even layer of Met-L-X over flooring to guard against fire from spilled metal.

For more data, circle 14 on colored card.

As for the chronic absentee, personal investigation may uncover the cause of trouble. Often an employee loses time from his job because of personal problems.

Prints on Round Surfaces of Drums, 5 to 55 Gallon Size

The Photo Process Screen Mfg. Co., 409 S. 11th St., Philadelphia 47, Pa., announces a new mechanized addition to its line of silk screen printers of cylindrical objects known as the Sparky Jigs.



For screen process printing on containers.

The new model, called the Sparky Jig "55," accommodates the screen printing fibre and steel drums from 5 to 55 gallon capacity.

Operating on 110 volts, the machine is designed to print the drums in five easy steps. The printing operation is smoothly performed by a 24-in. stroke. General specifications are: size 5½x5½x4-ft.; weight is about 350-lbs.; safety switches and guards are used throughout; construction all metal.

For more data, circle 15 on colored card.

New Coating For Metallizing Cast Metals

A new coating, formulated for use on cast metals which are to be vacuum metallized, has been developed by Schwartz Chemical Co., Inc., a leading producer of dyes and protective and decorative lacquers for the plastics industry.

The versatile coating, known as "MC-30," can be used both as a base coat and top coat in the metallizing of cast metals, according to the manufacturer.

Chief chemist A. A. Schwartz reports that the new lacquer cures to a hard, glossy, solvent-resistant coating which already is being used with excellent results by metallizers of cast metal novelty jewelry.

"MC-30" can be applied by dip coat, flow coat or spray and heat-cures in 30 minutes at 275° F. This curing time can be reduced by baking at higher heat.

A data sheet on "MC-30" may be obtained by writing to Schwartz Chemical Co., Inc., 326 W. 70th St., New York 23, N. Y.

For more data, circle 16 on colored card.

B. D. Lundy; Barrett Varnish Co.

The Barrett Varnish Co. of Cicero, Ill., announces the appointment of Mr. Bernard D. Lundy as sales manager of industrial sales. Mr. Lundy has been a sales representative for Barrett Varnish Co. for the last four years and has been associated technically with industrial finishing for 28 years.

For Your Convenience

Use INDUSTRIAL FINISHING magazine's "Reader Service" return cards to obtain further information on products described and illustrated in the "Materials; Supplies; Equipment" section which precedes this page; also to receive further information on what manufacturers have to offer—literature, products, supplies, services, etc., as mentioned on the following pages.

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They are published that you may have first-hand knowledge of the offerings of manufacturers advertising in this issue.

Industrial FINISHING

December, 1957, Issue

READER SERVICE DEPARTMENT

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67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
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What Manufacturers Offer--Literature, Materials, Equipment, Supplies, Services

Please Mark Returned Cards Correctly
Some of the returned cards we receive are not filled in correctly—and we cannot read a few of the hand written names and addresses. Before returning a card, please check to see if it is marked correctly—and legibly. Thank you.—Editor.

Multicolor One-Coat Finish called "Spex" is featured by V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39, Ill. Provides a combination of two or more distinct contrast or harmonizing colors in one coat with standard spray equipment. Hides all surface irregularities. Suitable for finishing wood, metal, plastic, brick, concrete and all types of composition board. Dries like lacquer. Available in a great number of attractive stock colors. Color card available.
For more data, circle 18 on colored card.

Stripping Problems solved with Dow Methylene Chloride formulations. Methylene Chloride is used for all sorts of formulations to strip paint, varnish, lacquers and epoxy resins. Makes a good degreasant, too. Full details from the Dow Chemical Co., Midland, Michigan.
For more data, circle 19 on colored card.

Industrial Product Finishes for coating metal, wood and other surfaces and made to specifications, are available from three plants strategically located—Lilly Varnish Co., Indianapolis; The Lilly Co., High Point, N. C.; The Lilly Co. of Mass., Gardner, Mass.
For more data, circle 20 on colored card.

Overspray in Your Water Curtain is a cause of overhead cost. While the overspray cannot be eliminated, the cost of removing deactivated paint from the spray booth tank and the water circulating system can. Investigate the Delpark paint spray booth water filter system which prevents deactivated paint from settling to the bottom of the tank by removing the paint matte while it is floating. Recirculation of the paint in the system is prevented and water nozzles remain foul-free. Ask for details from Industrial Filtration Co., Lebanon, Ind.
For more data, circle 21 on colored card.

Ideal Tack Rags are used prior to painting, to wipe off and hold dust, dirt, sand particles and lint too small to see, but which might leave a blemish or defect on the final coat of paint or finish. Ideal Chemical Co., 1499 Dean Drive, South Euclid 21, Ohio.
For more data, circle 22 on colored card.

New Color Styling reflects the quality of furniture. Lindeman Wood Finish has both. For new colors and finishes, inquire at Lindeman's studio and laboratory in Galax, Virginia, or write Lindeman Wood Finish Company, Inc., Indianapolis 2, Indiana.
For more data, circle 23 on colored card.

Instant Stripper—For metal or wood finishes. A non-flammable, non-toxic stripper which removes almost instantly, most finishes—enamels, either lacquer or synthetic (baked or air-dried), paints, varnishes, etc. V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39.
For more data, circle 24 on colored card.

Acyrlic, Alkyd, Vinyloid coatings for a very wide range of specialized industrial applications, are offered by The Varnish Products Co., 5206 Harvard Ave., Cleveland 5, Ohio.
For more data, circle 25 on colored card.

Exposure Tests. Actual weathering, corrosion and sunlight tests, direct and under glass for quick predetermination of durability and permanency in southern Florida by South Florida Test Service, 4201 N.W. 7th St., Miami 34, Florida.
For more data, circle 26 on colored card.

Perfex Satin Finishes, the original "flat" made by a new and different process, without the use of stearates or other flattening agents, now with improvements, have cut the dust-free time, increased print resistance, increased body and build, improved clarity and color . . . . all of which combines to produce a wonderful rubbed effect appearance and a pleasant waxed effect feel. Available in a full range of sheens to produce the exact rubbed effect and waxed feel desired. Perfection Paint & Color Co., Indianapolis 2, Ind.
For more data, circle 27 on colored card.

BOOKS
On Finishing Available

"ORGANIC PROTECTIVE COATINGS," (386 pages)	$7.50
"PROTECTIVE COATINGS FOR METALS," (643 pages)	12.00
"ORGANIC COATING TECHNOLOGY," Vol. 1	12.00
"ALUMINUM PAINT & POWDER" (219 pages)	4.50
"FLOW COATING," (296 pages) new	8.00
"CHEMICAL FORMULARY" (Vol. X) (Preceeding Volumes also available, same price)	8.00
"FINISHING METAL PRODUCTS"—2nd edition (352 pages)	6.50
"PRACTICAL FURNITURE AND WOOD FINISHING"	2.00
"FURNITURE FINISHING" 543 pages)	5.00
"SPRAY PAINTING"—Industrial and Commercial (169 pages)	2.50
"COLOR DECORATION AND DESIGN (200 pages)	3.00
"THE MIXING OF COLORS AND PAINTS" (292 pages)	3.00
"WOOD FINISHING" (361 pages)	3.00
"MODERN POLISHES AND SPECIALTIES" (316 pages)	7.50
"GRAINING" — Ancient and Modern (224 pages)	5.00
"SCREEN PROCESS METHODS OF REPRODUCTION" (252 pages)	4.00
"THE SCIENCE OF WRINKLE FINISHING" (204 pages)	5.00
"THE SCIENCE OF MODERN WOOD FINISHING" (386 pages)	7.50
"PAINT & VARNISH TECHNOLOGY" (509 pages)	8.00
"PAINT FILM DEFECTS — Their Causes and Cure" (544 pages	12.00
"FINISHING MATERIALS AND METHODS" (320 pages)	4.00
"ENCYCLOPEDIA OF THE CHEMICAL PROCESS INDUSTRIES" (820 pages)	12.00
"PROFESSIONAL FURNITURE PATCHING, REPAIRING and APPLIANCE TOUCH-UP," (90 pages)	3.50
"SCIENTIFIC PAINT EVALUATION," (321 pages)	9.00

Cash Must Accompany Order—
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INDUSTRIAL FINISHING
1142 N. Meridian St. Indianapolis 4, Ind.

Ovens for Drying or Baking Enamels, lacquers, japans, varnishes and other finishes in less time, at lower cost, can be obtained from Young Brothers Co., 1835 Columbus Road, Cleveland 13, Ohio. Engineers are available for consultation without obligation. Write for Bulletin 4.

For more data, circle 28 on colored card.

Unichrome Plastisols are vinyl coatings that stand physical service without peeling. They have appealing gloss; come in a variety of colors. Applied by all usual production methods. Manufactured by Metal & Thermit Corporation, Rahway, New Jersey.

For more data, circle 29 on colored card.

"Pearlescent" Finishes. Synthetic, but with the natural-look, in air dry or bake. For use on metal, plastic, wood or glass. Rona Laboratories, Inc., East 21st & East 22nd St., Bayonne 2, N. J.

For more data, circle 30 on colored card.

Electrostatic Spray—or Flow Coat. With industry-wide experience in these as well as other processes, Sherwin-Williams is equipped to supply the finishing materials and the technical service needed to adjust solvent balance, viscosity level and other factors to the needs of the installation. Get details from The Sherwin-Williams Co., General Industrial Division, Cleveland 1, Ohio.

For more data, circle 31 on colored card.

Screen Process Catalog. Everything used in connection with screen process work—materials, supplies, tools, equipment—and more is listed, illustrated and described in a new 120-page book distributed by Advance Process Supply Co., Inc., 1442 W. Kinzie St., Chicago 22, Ill. An alphabetical index of contents appears on the last page.

For more data, circle 32 on colored card.

Iridite Chromate Coatings are corrosion resistant and they provide an excellent base on various metals to be given later decorative finishes. Applied by dip or spray. Allied Research Products, Inc., 4004 E. Monument St., Baltimore 5, Md.

For more data, circle 33 on colored card.

Paint Stripping Clinic. Send samples, specimens or test panels and get an early report on the fast, economical way to strip off the coating safely. The DuBois Co., Inc., 1120 W. Front St., Cincinnati.

For more data, circle 34 on colored card.

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Synthetic PEARL ESSENCE with the natural look!

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BAKE OR AIR DRY FOR

Your Product Made of Metal, Plastic, Wood or Glass. Write for sample. Specify application and choice of vehicle.

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RONA LABORATORIES, INC. EAST 21st and EAST 22nd STS., BAYONNE 2, N. J.
Plants: Maine • New Jersey • Canada

Agateen Clears assure beauty, quality, good appearance and protection. Don't gamble with the sale of your products at the retail level. Investigate Agateen clear lacquers, air dry and semi-bake lacquer enamels and baking lacquers. Agate Lacquer Mfg. Co., Inc., Long Island City, New York.

For more data, circle 35 on colored card.

Airless Spray Painting saves as much as 50% in finishing materials, it is claimed by the manufacturer of this system of paint application, Nordson Corp., (formerly Bede Products Corp.), Amherst, Ohio. If painting volume is big enough to sell any paint to reclaimers, the manufacturer urges immediate investigation of the Bede Airless Spray Coating Process. Bede paint heaters also available.

For more data, circle 36 on colored card.

Latex Paints for metal cut fire hazards. A lot of plant problems are solved with the use of metal finishes made with latex. Fire hazard is reduced, fire insurance rates may be lowered because, in latex paints, water replaces flammable thinners. Disagreeable paint odors eliminated. Check with your industrial finish supplier or Dow Chemical Co., Midland, Mich.

For more data, circle 37 on colored card.

Non-dripping Lubricants for conveyors and other moving parts, made by Dow Corning Corp., Midland, Michigan. These are silicone greases that won't melt or drip at 450°F. Silicone lubricants withstand continuous high temperatures and corrosive fumes without oxidizing, decomposing, gumming. There's no dripping on newly finished parts. Ideal lubricants for conveyor bearings, cams, gears, valves, other moving parts. Free booklet on request.

For more data, circle 38 on colored card.

IDEAL TACK RAGS
FOR A PERFECT FINISH
Bulk or Bagged
IDEAL CHEMICAL COMPANY
1499 Dean Drive, South Euclid 21, Ohio

Ovens to Bake all pastel colors perfectly. High volume; fine quality; excellent performance. Free catalog. The Lanly Co., 760 Prospect Ave., Cleveland 15, Ohio.

For more data, circle 39 on colored card.

Pearl Essence Finishes—what they are and how to use them is included in a free Technical Bulletin offered by the Argenta Products Co., Eastport, Maine.

For more data, circle 40 on colored card.

Mar-Proof Lacquer, made by The Schaefer Varnish Co., Inc., Louisville, Ky., is a performance-proven finish that cannot be easily marred or scratched. Tougher than ordinary lacquers, it meets the most critical requirements of current production. Made in either clear gloss rubbing or satin finish, it produces a splendid transparent coating of full depth on maple, walnut, gum, mahogany and other cabinet woods. Working samples furnished without obligation.

For more data, circle 41 on colored card.

Wood Grain Reproduction. New Sturdy high quality machines for exacting grain reproduction—some practically automatic in operation—are offered by Schmutz Mfg. Co., 1600 W. Main St., Louisville 3, Ky.

For more data, circle 42 on colored card.

Modern Facilities Will Produce....

LINDEMAN 1907 50 YEARS 1957 SPECIALISTS IN WOOD FINISHING MATERIALS

7,400 Sq. Ft., New Research and Formulation Laboratory in Galax, Va.

FINE WOOD FINISHES

LINDEMAN has the experience and the facilities, plus a fifty-year reputation, to manufacture superior finishing materials for wood and allied wood products. Permit our salesmen and Technicians to help solve your finishing problems.

Courteous Cooperation ***Quality Materials***
Dependable Service ***Economical Prices***

LINDEMAN

Wood Finish Company, Inc.

Indianapolis 6, Ind. Galax, Va.

Silk Screens in silk, nylon or metal cloth and silk screen weatherproof enamel are available from The Naz-Dar Co., 461 Milwaukee Ave., Chicago 10, Ill., for use on nameplates, toys, dials, ash trays, printed circuitry, etc. Screen and ink information available by writing Dept. P-6.

For more data, circle 43 on colored card.

Kerpon Protective Coatings, formulated of Epoxy resins, afford better protection from corrosion caused by acids, caustics, moisture, alkalies, salt spray, water and weather elements. Kerr Chemicals, Inc., Box 89-F, Park Ridge, Illinois.

For more data, circle 44 on colored card.

Lacquers, NGR Stains, and everything used for finishing fine furniture, cabinets, pianos, etc., plus styling and technical service—in Southeast U. S. A. Snyder Brothers Co., P. O. Box 631, Toccoa, Ga.

For more data, circle 45 on colored card.

"Precision Barrel Finishing" is the title of a booklet containing valuable information on cutting down, deburring, descaling and burnishing of stainless steel strips and many other metal parts and products. For a free copy write Oakite Products, Inc., 32F Rector St., New York 6, N. Y.

For more data, circle 46 on colored card.

Texture Wrinkle Enamels give metal products better looks, give stubborn protection and hide imperfections. Texture Wrinkles are available in small pattern satin finish, small pattern glossy finish and pastel colors. Write us for help on any wrinkle finish problem. Randolph Products Co., Carlstadt, New Jersey.

For more data, circle 47 on colored card.

"Rollacoat," the Gasway equipment for rollercoating, applies many types of coatings, increases production rates, coats wood, metal, fiberboard, cardboard, and plastics, gives higher labor efficiency and up to 50% less paint cost. Full information available from Gasway Corp., 6463 N. Ravenswood Ave., Chicago 26, Ill.

For more data, circle 48 on colored card.

Isophthalic-based Coatings provide harder films, greater durability, better gloss at a lower cost. Samples for all alkyd applications, and a demonstration of the superior properties of Isophthalic-based coatings are available, as well as instructions for their preparation. Oronite Chemical Co., 200 Bush St., San Francisco 29.

For more data, circle 49 on colored card.

Wood Graining Machines. Vertical or horizontal roller models to make faithful grain reproductions on flat work or assembled cabinets. Easy, safe and fast in operation. Also Model DH-128 grainer that will print two colors, simultaneously, with perfect register. Hamant Tool Co., Inc., 502 Warren St., Dayton 9, Ohio.

For more data, circle 50 on colored card.

High-gloss Enamel holds up "down on the farm". It's the DuPont "Dulux" enamel, providing a good tractor finish that has the resistance of a bridge paint with the looks and gloss of an automobile topcoat. Regardless of use, "Dulux" enamel gives smooth paint coverage even on sharp corners and edges. It has the hardness to resist chipping. Covers more area with less paint. Many other points make it outstanding. Full details from E. I. duPont deNemours & Co. (Inc.), Finishes Division, Wilmington 98, Dela.

For more data, circle 51 on colored card.

RP Paint Arrestors increase paint spray booth efficiency, save time, floor-space and money. Inexpensive, replaceable pads reduce maintenance costs, and are more efficient than elaborate and expensive systems. Write Research Products Corp., Dept. 34, Madison 10, Wisc., for complete information.

For more data, circle 52 on colored card.

Viscosity Control in flow coating, dipping and other finishing processes can be done automatically with the Norcross viscosity control. Improves uniformity of coating, reduces labor and material costs and eliminates waste. Write for illustrated bulletin. Norcross Corp., 247 Newtonville Ave., Newton 58, Mass.

For more data, circle 53 on colored card.

Graining Plates of any pattern, size or shape (wood grain, leather, marble, fabric, etc.) for hand or machine graining on wood, hard-board and metal. Also cylinder machines. American Richwood Products Co., 104 E. Mason St., Milwaukee 2, Wis.

For more data, circle 54 on colored card.

Dupor No. 4 Respirator has double filters for easy breathing and greatest filtration of paint spray, dust and fumes. Soft rubber face mask gives an airtight fit. Patented Dupor valves bring in clean air and throw off breathed air. Weighs only 4-oz. H. S. Cover, P. O. Box 2508, South Bend 14, Indiana.

For more data, circle 55 on colored card.

PROTECT LUNGS *against*
PAINT SPRAY – DUST – FUMES

DUPOR No. 4 RESPIRATOR has big double filters for easy breathing and greatest filtration! Soft rubber face mask gives airtight fit. Patented DUPOR valves bring in clean air—throw off breathed air! Weight 4 oz. Economical! Costs only $2.00 postpaid. Order Now!

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PAINT MIXER

MIRACLE
PAINT REJUVENATOR

All paint restored to its original consistency without opening the can.
2 minutes per gal.
MIXERS AVAILABLE
¼ PT. to 55 GALS.

5 GAL. MODEL

MIRACLE PAINT REJUVENATOR COMPANY
128E.10thSt.,St.Paul,Minn.

Drum Upender No. 32 for upending heavy drums, takes the strain and effort out of handling drums of paint, etc. Sizes and shape of upender spreads lifting pressure over large area to prevent drum damage. Morse Mfg. Co., Inc., 763 W. Manlius St., East Syracuse, N. Y.

For more data, circle 56 on colored card.

Speedip Whirl Enameler is fast, clean and economical for coating a variety of small parts (up to 20-in. long) of wood, metal or plastic. It involves a power dip, lift and fast whirl, all inside a closed container. Ronci Machine Co., 2 Atlantic Blvd., Centerdale 11, R. I.

For more data, circle 57 on colored card.

Restore Paint to its original consistency without opening the container, whether in ¼-pint cans or in 55-gallon drums. Time required is only 2-minutes per gallon. Full information from Miracle Paint Rejuvenator Co., 128 E. 10th St., St. Paul.

For more data, circle 58 on colored card.

50% Paint Saving reported with the use of the Ransburg No. 2 Process. Puts paint on the product instead of up the stack. A single reciprocating disc unit automatically handles the paint application in one plant which formerly required eight sprayers. A No. 2 Process brochure which pictures many on-the-line examples of electro-coating on a wide variety of products is available upon request. Ransburg Electro-Coating Corp., Indianapolis 7, Indiana.

For more data, circle 59 on colored card.

Electro Cold Stripper takes off Scotchlite reflective sheeting and background paint in seconds from traffic and road signs, whether aluminum or steel. Kodak photo resist coatings are easily and safely removed by immersing printed circuit in Electro Cold Stripper for only a few seconds and then rinsing with water. Nonflammable; non-toxic; no heat; no current. Allied Finishing Specialities Co., 2641 W. Grand Ave., Chicago 12, Ill.

For more data, circle 60 on colored card.

Tops in Finishes, or "Head and Shoulders" above the rest is an expression used by Rockford Varnish Co., Rockford, Illinois, to direct attention to the quality of its protective and decorative finishes. Laboratory and manufacturing departments, working as a team, provide the long and specialized experience needed to develop and deliver the best of industrial finishes.

For more data, circle 61 on colored card.

"Speck-Free" Finishes every time when you use Bond Tack Cloth. Save time and work with Bond Tack Cloths in handy rolls, bulk, white or gold, in four different kinds of cloth. Bond Chemical Products Co., 2641 N. Clybourn Ave., Chicago.

For more data, circle 62 on colored card.

Industrial Ovens for conveyorized finishing systems and batch finishing systems, aluminum aging ovens, core baking ovens, flux drying ovens, special process ovens and laboratory ovens, cabinet and portable types, are available. Write for specific information to meet specific requirements. Industrial Ovens, Inc., 13821 Triskett Road, Cleveland 11, Ohio.

For more data, circle 63 on colored card.

Roller Coaters can boost your production, reduce down-time, cut coating costs. These heavy-duty machines are ruggedly and rigidly built to maintain high quality production. Apply paints, sealers, waxes, etc., to flat work such as wood, metal, plywood, plastic, etc. Literature available describing equipment with optional features to meet your finishing needs. The Black Brothers Co., Inc., Mendota 1, Ill.

For more data, circle 64 on colored card.

"Cres-Lite" Bronze Powders for spraying, dipping or flow coating give a plated effect like a pure metalic bronze powder. A full range of 33 colors are in stock, or colors can be matched to suit your particular needs. New colors and shades of metallic finishes can be created in our Design Department. New color card showing our 'in-stock" bronze powders is free upon request. Crescent Bronze Powder Co., 118 W. Illinois St., Chicago 10, Ill.

For more data, circle 65 on colored card.

Quartz Paint Ovens are based on the use of special Clepco quartz heaters which are designed to emit that part of the heat spectrum most readily absorbed by paints. Research facilities are available to determine the most efficient quartz oven for your requirements. The Cleveland Process Co., 1965 E. 57th St., Cleveland 3.

For more data, circle 66 on colored card.

Multakolor—One-Spray Coat. A product of United Lacquer Mfg. Corp., Linden, N. J. Multakolor is a one-spray coat material which gives a textured finish of two or more colors. Can be used on any surface.

For more data, circle 67 on colored card.

Push-Button Touch-Up? With the Sprayon Self-Spraying Touch-Up Tool, any employee can quickly repair the paint damage where it happens—on the production line, inspection, shipping, warehouse, etc. Free touch-up folder available. Sprayon Products, Inc., 2071 East 65th Street, Cleveland 3, Ohio.

For more data, circle 68 on colored card.

Highlights and Sidelights

—how to match colors to avoid eyestrain and fatigue

—how to apply the fundamental law of color mixing

—how to indentify water colors and oil paintings

—how to use color to gain desired psychological effects

—the arithmetic of color

—how to stain wood correctly—how to dye material with oil colors

—how color influences our daily lives

—the early uses of color in America

—how to maintain good vision for the study of color

—dictionary of color terms

Can you use handy charts on subjects like these?

1. A master chart for color mixing
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3. Color combinations graded in the order of their visibility and legibility
4. Materials needed for accurate measurement of pigments, paste, vehicles and thinners
5. Chemical mixtures to be avoided
6. Volatile thinners and their comparative order of evaporation.

Price $6.00—Money Back Guarantee

INDUSTRIAL FINISHING

1142 N. Meridian St. Indianapolis 4, Ind.

Water Dip Lacquer affords a quick and effective protection for plated parts. Out of last hot water rinse, in and out of water dip lacquer — this removes all traces of water and leaves a durable transparent coating that resists finger printing, tarnishing and mild scratches. G. J. Nikolas & Co., Inc., 2850 Washington Blvd., Bellwood, Illinois.

For more data, circle 69 on colored card.

A new 8-page bulletin (8½x11-in.), illustrated and printed in two colors, shows various features of the Auto-Rack wicket dryer, the Auto-Jet turbo dryer, conveyors and an evaporative cooling unit—all designed and built for fast screen process work on flat stock. Copies are offered free by Advance Process Supply Co., 1442 W. Kinzie St., Chicago 22, Illinois.

For more data, circle 70 on colored card.

To Paint Recessed Letters

A leaflet describing various techniques used to fill recessed letters, symbols, and numerals with paint has been published by Logo Inc. Division. Bee Chemical Co., 12933 S. Stony Island Ave., Chicago 33, Illinois. It describes problems involved with using coatings and dry wipes on second surface clear plastics, as well as machine applications and different types of masks that can be used. The bulletin will be of interest to design engineers, process engineers and finishing room supervisors.

Fro more data, circle 71 on colored card.

Finishing Systems Are Planned, Engineered, Built and Installed

An 8-page (8½x11-in.) bulletin printed in two colors shows illustrations and brief descriptions of batch-type and conveyorized paint baking (radiant heat) ovens, dry-off and burn-off ovens, water wash and conveyorized spray booths, flow coaters, conveyorized washers, air make-up units, air stream heaters, blowers, control systems and control panels.

Many of these units are included in Burdett engineered systems for product cleaning, painting and paint baking. Copies of the bulletin are free from Burdett Mfg. Co., 4920 S. Monitor Ave., Chicago 38, Ill., or from any of the firms that represent Burdett in 14 other cities, from New York to Los Angeles and from Minneapolis to Dallas.

For more data, circle 72 on colored card.

"Trichene D" removes grease, oil, cutting compounds and other contaminants, and leaves part clean and dry; leaves no deposits of any kind and never causes etching or staining. Free booklet entitled, "Vapor Degreasing With DuPont Trichene D" is available. A DuPont service man will help you determine where present cleaning costs can be cut, or help you choose the most efficient cleaning process if you plan to expand or plan a new installation. E. I. DuPont De Nemours & Co., Inc., Electrochemicals Dept., Chlorine Products Divn., Wilmington 98, Dela.

For more data, circle 73 on colored card.

Half-second Butyrate Lacquers produce films of low color and high clarity with excellent strength and flexibility at high and low temperatures. Extremely stable to ultra-violet light. Half-second butyrate films retain their initially low color, high strength and flexibility for long periods. Half-second butyrate is a product of Eastman Chemical Products, Inc., Kingsport, Tenn., used in the formulation of lacquers. Consult your supplier or write direct to Eastman for more information.

For more data, circle 74 on colored card.

Synthetic Baking Enamel called "Durapol" is featured by Maas & Waldstein Co., 2110 McCarter Highway, Newark 4, N. J., as a new member of more than 50,000 exclusive formulas. One coat provides a whiter white than ordinary white enamels; a white ultra-resistant to yellowing. Available in unlimited colors. Typical applications include home appliances, lighting-fixture reflectors, and all products requiring good ultra-violet, salt spray and stain resistance.

For more data, circle 75 on colored card.

Solvents and Chemicals all under one roof to give fast, convenient service. Technical service is available and members of the group each maintain laboratory facilities to serve industry in solving problems involving solvents and chemicals. Call your group member or write The Solvents and Chemicals Group, 2540 W. Flournoy St., Chicago 12, Ill.

For more data, circle 76 on colored card.

Spray Nozzles for all kinds of spraying operations, including all kinds of spray washing and cleaning setups. Catalog No. 24, an illustrated reference manual, shows the complete line offered by Spraying Systems Co., 3240 Randolph St., Bellwood, Illinois.

For more data, circle 77 on colored card.

Ionic Electrostatic Centrifugal Atomizer breaks production bottlenecks. A low capital investment, it increases production, maintains quality, cuts paint consumption. Reciprocating and stationary models are available. Up to 20 color changes per hour can be made. Full details from Ionc Electrostatic Corporation, Garfield, New Jersey.

For more data, circle 78 on colored card.

Third Complete Finishing System installed by The R. C. Mahon Co., Detroit 34, in the Hussmann refrigerator plant, is designed to paint steel shelving. This latest system consists of a five-stage metal cleaning and rust-proofing machine, dry-off oven, two hydro-filter spray booths, an air conditioned spray room and a finish baking oven. Experienced in the design, manufacture and installation of complete finishing systems (large, medium or small), Mahon offers help to manufacturers seeking to improve their paint application schedules or planning new construction. Catalog A1568 is available.

For more data, circle 79 on colored card.

Specific Coating Problems receive the attention of experienced research engineers in the laboratories of Universal Paint & Varnish Inc., Bedford, Ohio. Regardless of your needs, there is a Universal coating immediately available, or one that can be developed especially to meet your individual requirements. Our business is industrial finishes, and their correct adaption to rigid application, appearance and protective standards.

For more data, circle 80 on colored card.

Better Cleaners to The Trade has been the policy of Northwest Chemical Co., Detroit 4, Mich., since its founding twenty-five years ago. Top quality ingredients carefully blended with mature experience and pleasingly flavored with good service, are responsible for the position of leadership in the cleaner field, now occupied by Northwest. Ask for details on the newest types of cleaners.

For more data, circle 81 on colored card.

"Hammercote" Finishes by Tousey Varnish Co., 520 W. 25th St., Chicago 16, Ill., allow for production touch-up without discoloration. No longer necessary to completely refinish painted pieces that have become scratched or gouged in production. Damaged place can be sprayed with Hammercote, rebaked and the newly patched area will match the twice-baked part so closely it would take an expert to see the difference.

For more data, circle 82 on colored card.

Primers and Enamels by The Gilbert Spruance Co., Philadelphia 34, Penna., and Winston-Salem, N. C., have special eye-appeal; are tough and fast-drying; are exceedingly durable, prolong life, preserve metal surfaces and general appearance. Are specially adaptable for coating vehicles and machines subjected to the rigors of weather, corrosion and rough handling.

For more data, circle 83 on colored card.

Burners, Blowers, Controls—North American's staff of 58 combustion and control engineers can help you save money by saving fuel, increasing production, improving product quality, bettering safety performance, achieving temperature uniformity, insuring cleanliness and less maintenance. The North American Mfg. Co., Cleveland 5, Ohio.

For more data, circle 84 on colored card.

Write for Information & Literature.

MORSE DRUM UPENDER No. 32

Takes the strain and effort out of upending heavy drums. Has 40" handle offset 35° for top efficiency. Hefty 1¼" hook provides clearance for largest chime. 2½" x 8" toe plate spreads lifting pressure over large area to prevent drum damage. Order Several Today!

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763 West Manlius St., E. Syracuse, N.Y.

Metal Conditioning, Rust Removing, Phosphatizing Products for steel, zinc, aluminum, cadmium, etc. Metalprep, Galvaprep, Lyfanite, Phosteem and Prep-N-Cote are included in the products of Neilson Chemical Co., 2306 Gainsboro, Detroit 20 (Ferndale), Mich. "Specialized Experience" and "The Right Metal Treating Process" in one package are featured.

For more data, circle 85 on colored card.

Bulb-Type Ovens made more efficient by installing driQuik F.R. assemblies. The units fit into your present oven and enable you to save most of the cost of a new oven. Take advantage of greater efficiency of driQuik ceramic-type generators. Write for literature. Dry Clime Lamp Corp., Greensburg, Indiana.

For more data, circle 86 on colored card.

"Job Shop" Finishing with Kirk & Blum ovens. A job shop never knows what product it may process tomorrow, yet designing an oven for that type operation is no mystery for Kirk & Blum's experienced engineers. An "A" type oven recently installed, accommodates a wide variety of products finished. To allow space for storage and packing below, the oven is mounted above the floor on structural steel supports. It is a gas-fired, re-circulating, automatically controlled, fully protected 3-pass oven. Send for new "Ovens for Industry" catalog. The Kirk & Blum Mfg. Co., Cincinnati 9, Ohio.

For more data, circle 87 on colored card.

Automatic Spray Machines are featured by The DeVilbiss Co., Toledo 1, Ohio, for painting products of practically any size or shape, and for use with most conveyor systems. Reject problems are eliminated. Split-second timing, accurate gun positioning, and synchronized conveyor speeds prevent streaks, sags and wasteful overspray. Details on request.

For more data, circle 88 on colored card.

Strippable Spraybooth Coating that absolutely can't burn or dry, is offered by Better Finishes & Coatings, Inc., Newark 5, N. J. Liquid Envelope #49-03F.X., as it is called, is based on a non-flammable solvent. It sprays easily, dries to touch in less than ten minutes, and peels off in large pieces. Five-gallon test sample at drum-lot price. Send for details.

For more data, circle 89 on colored card.

Heat-Resistant Aluminum Coating made by Perfection Paint & Color Co., contains Alcoa aluminum pigments. Applied to potato baking units, for example, the aluminum coating is subjected in use to continuous heating and cooling, demonstrating high heat-resistant durability with no peeling or flaking. It is a non-deteriorating, non-toxic finish ideal for finishing units used in food preparation. Consult your paint supplier about metallic finishes made with Alcoa aluminum pigments, or write Aluminum Company of America, Pittsburgh 19, Penna.

For more data, circle 90 on colored card.

Glidden Nu-Pon Epoxy Baking Primers offer positive adhesion to metal, can be dipped or flow-coated; manually or automatically sprayed. Nu-Pon Primers combine complete protection with thin-film economy, bake-dry to a tough, flexible film that provides maximum resistance to humidity, corrosion, impact and abrasion, furnishes an excellent base for Glidden Nubelite, the quality baked-enamel topcoat. For appliances, vending machines, office furniture or other fabricated metal products. Complete details from The Glidden Co., Industrial Paint Division, Cleveland 14, Ohio.

For more data, circle 91 on colored card.

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Produces a high luster on a variety of finishes

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Phones: TUcker 6-2133; 6-2134

P. O. BOX 621 — TOCCOA, GEORGIA

Large Tunnel Type Spray Booth built and installed by Peters-Dalton, Inc., Detroit 12, Mich., for a major automotive manufacturer, assures control of overspray and fumes. A comparable or smaller cross draft, flood-sheet booth may be the answer to your finishing problem. The size of product or production run quantities may not require as large an installation. However, regardless of your needs, Peters-Dalton can design a finishing system to best and most efficiently meet your production finishing requirements.

For more data, circle 92 on colored card.

Beautiful Wood Grain Finish. Roto graining machines simulate the finest true fidelity reproduction of beautiful wood grains on even the most inexpensive low cost woods, composition boards, metal or paper. Print on completely assembled units or pre-fabricated parts . . . . grains on flat, round or curved surfaces. The newest addition to the Roto Finishing line is its 52-in. horizontal wood graining-finishing machine with revolutionary conveyorized feed and varnish roller-coating attachment. Roto Finishing Systems, 1501 S. Alameda St., Compton, Calif.

For more data, circle 93 on colored card.

Pioneering Quality Industrial Finishes since 1928 is a statement of policy by The Clinton Co., Chicago 22, Ill., and the fact that the quality of its finishes can be relied or depended upon has been proven through the years. A complete line of Clinton Quality finishing materials is available, or finishes may be formulated to specifications.

For more data, circle 94 on colored card.

Sanding Time Cut 38% with Lowe Vinoc, a spray material demonstrated by a Lowe Brothers finishing engineer. The company's finishing engineers help to find ways to reduce costs, they know finishes and methods, and will gladly make a "flow-chart" analysis of your finishing system, no obligation. The Lowe Brothers Company, Dayton 2, Ohio.

For more data, circle 95 on colored card.

Free Classes for Finishers

The company's annual free classes for wood finishers will be held in Syracuse, N. Y., on January 27, 28 and 29, according to an announcement from Finishine Laboratories, Inc., 627 Tallman Street, Syracuse 4, New York.

Prices of Finishes

SOME BUYERS of industrial finishes are attempting to utilize competition factors in their playing one coating manufacturer against the other to secure a favorable price advantage. Up to a certain point this may be considered good business policy, but when the price drops substantially Mr. User is no longer getting the same material — only a reasonable facsimile of same.

It is unfortunate that quality in an industrial finish is not immediately revealed in its performance. Yellowing by ultra-violet, fading by weathering, etc.—these characteristics are only some of the results presented by the use of cheaper substitutions in lacquer and enamel formulations. They may not become apparent for some time after the coating application.

One furniture maker who has always been known for his policy of buying finishing materials strictly on a price basis, recently received a rude awakening. He would buy from one company until some competitor came in with a cheaper product. This was so standard that very rarely if ever did any paint manufacturer receive a repeat order. The only quality considered was the sprayability. For many months this cheap buying policy seemed to be an adequate procedure. Finally "the roof fell in." Complaint after complaint came in from customers; then followed some court litigation. Finish was peeling, chipping, checking

At the close of another year—

We thank our friends in the finishing industry—

—Your friendship and goodwill are our most valued assets . . . .

—May the great gifts of health and happiness be yours in the coming year.

TENAX FINISHING PRODUCTS COMPANY
390 Adams St., Newark 5, N. J.

Custom Coatings of Character

and yellowing. Usually it is the price chiseler who squeals the loudest.

A lacquer or enamel supplier might sharpen his pencil for a small price reduction but any large differences can only be made at the expense of basic raw materials and quality. The old axiom, "you get what you pay for" is always in effect. To expect otherwise is to gamble against "house percentages."—*Si. Cole.*

Northwest Chemical Man Will Assist Metal Finishers

Northwest Chemical Co. of Detroit announces the appointment of Rex MacKercher as special representative on product application.

Mr. MacKercher will work closely with Northwest's customers in supplying information on products and methods developed in Northwest Chemical Company's laboratories. In this assignment he will supplement Northwest's established sales force.

MacKercher's academic training and industrial experience equip him to render this technical service to the metal finishing industry. In addition to a degree in chemical engineering, he has had wide experience in the field of industrial cleaning and metal finishing. His background includes technical sales, production and development experience with some of the country's largest chemical firms.

H. B. Davis Co.; New Officers

At the regular meeting of the Board of Directors of The H. B. Davis Co., Baltimore, the following new officers were elected:

John H. Kelley and James P. Cannon as Vice Presidents; and Arthur L. Smith, Jr., as Assistant Executive Vice President.

Mr. Kelley, formerly Chief Chemist, heads up the technical and research division of the Company. Mr. Cannon heads the resins and vehicle division.

Random Comment on the Industrial Scene

(Continued from page 6)

pletely finished for both exterior and interior wall and roof surfaces, they are available in four sizes and six colors.

The panels are extremely resistant to shattering, crazing, fading, sharp blows and vibrations. Maintenance costs are negligible since they are not affected by wide temperature variations and resist weathering, harsh chemicals, rot and fungus.

* * *

No Brackets or Screws. With delivery of 271,000 zinc alloy emblems to the Auto Club of Southern California, Pee Cee Tape & Label Co., 521 N. La Brea Ave., Los Angeles 36, Calif., has proved that the most intricate die-cut emblem or part can be permanently affixed to metal surfaces with two-sided die-cut pressure-sensitive tape. The Pee Cee Process for metal to metal bonding totally eliminates brackets and screws.

A change in the traditional method of applying auto club membership insignias to car bumpers or rear decks became imparative as new automobile designs integrated license plates with body structure. Pee Cee, world's largest converters of pressure-sensitive materials, coupled technical knowledge with precision equipment and produced the answer for Plastic Dress-Up, El Monte, Calif., firm which manufactured the auto club insignia.

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EST. 1931

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There may be certain firms or individuals to whom you do not want your reply sent. Simply address your communication to the box number in the ad and attach a separate list of names. If the advertiser is on the list you submit we will then destroy your letter. Names of advertisers using box numbers are never revealed.

POSITION WANTED.

Finishing Foreman desires position as such. 39 years old with 21 years of experience in wood finishing, 16 years as Finishing Foreman. All replies answered immediately. Address IF-537, care Industrial Finishing.

POSITION WANTED.

Experienced wood finisher with knowledge of all finishing phases, furniture repairing and some metal background, desires connection with reliable company. Good character and excellent work record. Address IF-538, care Industrial Finishing.

ISRAEL INDUSTRIAL FINISHING CONSULTANT.

Highly skilled, professional expert, 15 years' experience in ISRAEL, seeks connection with industry interested to invest in Israel or to issue license. Can furnish A1 references. Address IF-539, care Industrial Finishing.

FORMULATOR WANTED.

Experienced formulator for development of industrial enamels. Technical background and ability to administer laboratory functions desirable, but not essential. This is an excellent opportunity to become associated with an aggressive, growing organization. Salary open. Give full qualifications, education and employment record. All replies confidential. Send to H. A. Chloupek, LILLY VARNISH CO., 666 South California St., Indianapolis 7, Ind.

CHIEF CHEMIST WANTED

To head Industrial Laboratory for a large progressive independent firm. Salary commensurate with past experience. Will have the cooperation of other good industrial chemists and assistants. Address IF-534, care Industrial Finishing.

INDUSTRIAL FINISHES FORMULATORS.

Inquiries are invited from men with several years' experience in industrial coatings, particularly appliance finishes. Two experienced men are required. One of these will be a man qualified to direct a group. If you are technically qualified and desire to work in a pleasant environment with other top-notch men in a modern laboratory and are interested in good return for your efforts, we want to hear from you. Attractive salaries, excellent working conditions and our expansion program make these opportunities worth while investigating. All correspondence will be strictly confidential. Write C. M. Jackson, JONES-DABNEY COMPANY, Box 328, Louisville 1, Kentucky.

SUPERVISOR WANTED.

Decorating Department. Experienced in supervision of production operations in spray painting small parts and related activities in high volume production. Experience with vacuum metallizing desirable, but not essential. An excellent opportunity. Reply in detail to WOLVERINE PLASTICS, INC., Milan, Michigan.

CHEMIST WANTED.

Industrial Finishes Chemist with formulating experience. We manufacture lacquers, enamels, inks and all types of specialty coatings for flexible and rigid surfaces. Excellent opportunity with progressive New England firm in Boston area. Contact Technical Director, RAFFI & SWANSON, INC., 100 Eames Street, Wilmington, Massachusetts.

INDUSTRIAL FORMULATOR WANTED.

Experienced formulator for development of industrial enamels who would like to work with a fast growing wide awake organization; with liberal insurance, pension plan and unlimited opportunity. Write in confidence on experience, salary requirements and availability to RELIANCE VARNISH CO., 277 Mt. Grove St., Bridgeport 5, Conn.

SALESMEN—INDUSTRIAL FINISHES.

Well established and expanding manufacturer in the Newark area will consider an experienced man with proven record of achievement selling industrial finishes. Our proposition and an exceptional opportunity for security and high earnings allow us to insist on highest qualifications. Answer in detail. Replies confidential. Address IF-529, care Industrial Finishing.

SALESMAN WANTED.

Ambitious salesman for industrial finishes. We have established accounts that will form a neucleus for a good paying territory if you can offer additional business in synthetics, enamels, lacquers, basecoats, inks, specialties. Territory open in New Jersey, Connecticut, Massachusetts. Nationally known company. Address IF-541, care Industrial Finishing.

DIRTY THINNERS AND SOLVENTS WANTED.

Send samples and letter giving approximate contents. GET CASH FOR SCRAP. THE JOHANN COMPANY, 13900 Grant St., Dolton, Illinois. Phone Dolton 4850.

PAINT STRAINERS

For straining lacquers, enamels, paints. Made of heavy paper with cloth inserts in different meshes. 6-in. diameter conical shape. Write for catalog and samples. GERSON CO., Box 175-A, Mattapan 26, Massachusetts.

VAPOR DEGREASER FOR SALE.

Steam-heated, Blakeslee type D-85, serial No. 9664; with solvent cooler, water separator and storage tank. Includes spray pump and motor, and exhaust pump. Working dimensions: 10x3x4-ft. Good condition. LIGHTING PRODUCTS INC., Highland Park, Ill. ID 2-5180.

PAINT SALESMEN WANTED

For industrial and transportation finishes. Open territory in Illinois and Indiana. Progresisve paint company that is not too large, specializing in a full line of paints and varnishes. Salary and bonus commensurate with performance. State experience and salary desired. Our employees know of this ad. Address IF-540, care Industrial Finishing.

SALES REPRESENTATIVES WANTED.

Leading manufacturer of maintenance and industrial finishes is expanding its sales staff. We expect to place sales representatives in St. Louis, Cleveland, Detroit, Pittsburgh, Philadelphia and Upper New York. Wanted ambitious and aggressive men between 25 and 40. Sales experience preferred but not necessary. Technical background very helpful. Good starting salary, plus expenses, plus sales commission. Write us if you are interested in joining an aggressive and fast expanding organization. Address replies to DETROIT GRAPHITE DIVISION of The Valspar Corp., 7701 W. 47th St., Lyons, Illinois.

WE BUY OLD PAINT!!

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Please send whatever data, color chips, samples, etc., easily available.

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9045 Vincent, Detroit 11, Mich.

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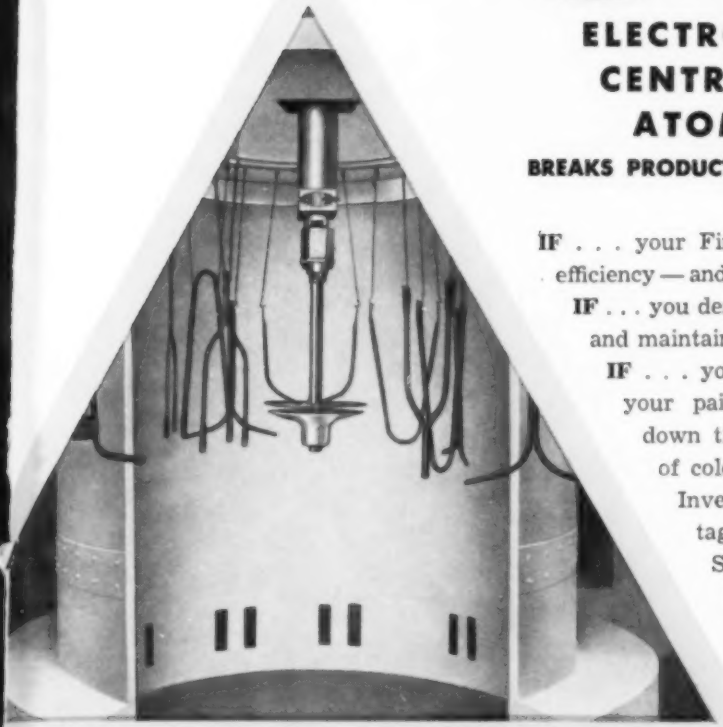

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